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[*Authors alone are responsible for the contents of their respective Papers.*]

SECRETARY'S NOTES.

1. The following officers joined the Institution during the month of August:—

Lieutenant V. L. Henderson, Loyal North Lancashire Regiment.
Colonel R. K. Stewart, Lanarkshire Imperial Yeomanry.
Lieutenant C. A. Lambert, R.M.A.
Captain C. H. Versturme-Bunbury, R.E.
Lieutenant J. S. Drew, Cameron Highlanders.
Lieutenant E. G. Woods, 8th Hussars.
Lieutenant Lord A. I. Percy, Grenadier Guards.
Captain O. M. J. da Costa, Indian Army.
Lieutenant C. A. S. Page, Middlesex Regiment.

(No officer of the Royal Navy, Militia, Royal Naval Reserve, or Volunteers joined the Institution during the month.)

2. The Historical and Descriptive Catalogue of the Exhibits in the Museum is now in print, and will, it is hoped, be placed on sale early in October; it will be illustrated, and the price sixpence. It has been produced at a considerable cost, and the Council hope that Members will assist in the matter by purchasing copies.

3. The new building, which has been closed for cleaning purposes, was re-opened on 3rd September.

4. The Council have arranged for a course of Military History Lectures, on the subjects set for the November Promotion Examinations, to be delivered by Dr. Miller Maguire in the Theatre of the Institution at 4 p.m. on the following dates:—

October—9th, 12th, 16th, 19th, 23rd, 26th, 30th.
November—2nd, 6th, 9th.

The fee for the course will be £1 for members of the Institution, and £2 for non-members.

The Council, in conjunction with the General Officer Commanding the London District, are also arranging for a similar course of lectures to be delivered on the same dates at 6.30 p.m. for officers of the Auxiliary Forces who are unable to attend the afternoon course.

Special campaigns, etc., selected for the examinations :—

*First Paper :—General Questions on the Peninsular Campaign, from March, 1811, to the end of October, 1813.

*Second Paper :—Salamanca, 1812, from the surprise of Almaraz in May, to the occupation of Madrid in August.

Was also set in May, 1906.

*First Paper :—General Questions on the Peninsular Campaign, from March, 1811, to the end of October, 1813.

*Second Paper :—Special Campaign—Vittoria, 1813, from May to the end of June, 1813.

Campaign set for the first time.

5. The following lectures have been arranged for the coming session :—

"The Organisation of the Canadian Field Artillery." By Colonel F. G. Stone, R.A., Commanding 1st Brigade (Heavy) R.G.A.

"Military Defence Work by Civil Engineers." By Mr. G. Good, M. Inst. C.E.

"Physical Training and its Advantages." By Captain H. T. Cantan, Superintendent of Gymnasia, Dublin District.

"On Aerial Navigation." By Colonel J. D. Fullerton, R.E.

6. Additions to the Museum.

(*a.*) Sword, presented in 1804, to Captain John Hilton, 2nd Regiment, Loyal London Volunteer Infantry, by the 5th Company of the Regiment "as a testimony of their respect for his conduct as a Gentleman and ability as an Officer." Captain Hilton commanded the 5th Company. Given by James Hilton, Esq., F.S.A.

(*b.*) An early 19th Century Glass, bearing the words "Nelson's Victory" surrounded with a wreath, and on the other side an engraving of the "Victory." (Purchased.)

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*No detailed questions will be set with reference to the action of the Spanish and Portuguese Armies, and no question of any kind will be set with reference to these armies when their action had no bearing on that of the British troops.

PROPOSALS FOR THE FUTURE RAISING, ORGANISATION, AND TRAINING OF THE ARTILLERY MILITIA.

By Colonel J. D. LEGARD, C.B., The Yorkshire (Duke of York's Own) R.G.A. (M.).

Thursday, 5th April, 1906.

Major-General Sir J. WOLFE MURRAY, K.C.B., R.A. (Master-General of the Ordnance), in the Chair.

The CHAIRMAN :—A very few words, I think, are necessary from me in introducing the lecturer to you. He has lectured here on several previous occasions, I believe, and no doubt he is known to a great many of those who are here present. I would like to point out to you the very special experience of our varied military forces which Colonel Legard possesses, for originally he was in the artillery for a number of years; he served in it throughout the Zulu war, passed through the Staff College, and, after retiring, joined the Auxiliary Forces, in both branches of which he has served. He commanded a brigade of Volunteers, and also commanded, until last summer, a well-known Militia Artillery corps in the north. So that on the grounds of that very wide experience I think he can claim, quite apart from any other personal consideration, a great knowledge of the subject. I will now ask Colonel Legard to give us his lecture.

LECTURE.

GENERAL.

THE consideration of this subject entails to some extent dealing with questions affecting the Militia Force as a whole, before passing to those matters which are peculiar to one portion of it. It will be my endeavour to treat as briefly as possible this afternoon the general subject, and to deal at greater length with that branch of it with which we are for the moment more immediately concerned.

33 years after its transference to the War Office, the Militia was, in 1904, declared by the Duke of Norfolk's Commission to be, in its existing condition, unfit to take the field for the defence of the country. At the same time, it was made clear that the Force itself was not responsible for its deplorable state of inefficiency.

During the two years that have elapsed since the Commission's Report, no serious steps have been taken towards bettering its con-

dition. Minor measures, as to pay and bounty and so on, have been adopted. Experiments have been made and condemned somewhat hastily, such as the appointment of the Militia Advisory Board and the formation of the new Militia Reserve—both, in the opinion of Militia officers, useful reforms. Legislation has been introduced with the object of rendering the Militia liable to foreign service, but not seriously pressed in Parliament. For practical purposes the Militia is to-day in the same, if not actually in a worse, position than it was two years ago. And yet there is plenty of evidence to show what are the real causes of the malady, and sufficient expert advice is available to effect a cure. The case, however, is so bad that reform to be effectual must not only be sweeping but speedy if the Militia is ever to be placed in the position it should occupy in our scheme of Imperial Defence.

The Duke of Norfolk's Commission appeared to have some difficulty in finding out for what purpose the Militia existed as part of our military system. It was suggested that such a large number of men, limited by the terms of their engagement to service within the United Kingdom, and backed by a still more numerous body of Volunteers, could only be intended to resist a somewhat formidable invasion by a European Power. The Committee of Imperial Defence seemed to have held the opinion, since confirmed by a statement in Parliament by the late Prime Minister, and now adopted by the present Secretary of State for War, that nothing more serious than a raid of from 5,000 to 10,000 men need be contemplated under existing conditions. The Commission were told that they might fix the numbers of the Militia provisionally at 100,000 men. (Report Appendix B, No. 6.)

The W.O. itself has never had any doubt as to the proper use for the Militia. They have treated it mainly as a recruiting agency for the Regular Army. No serious attempt has ever been made to make it into an effective fighting force, or to render it in any sense fit to take the field.

The Militia is sometimes described as a cheap force. Figures supplied by the W.O. to the Duke of Norfolk's Commission place the annual cost of the Militia at £2,090,000. It is also stated, with some doubt, however, that £225,000 of this total may be taken as the cost of Militiamen who join the Army, *i.e.*, the value of the Militia as a recruiting agency. The balance, viz., £1,865,000, is the cost of the Militia itself. A force which is "unfit to take the field in the defence of the country" is certainly not worth this sum—it is dear at any price. The Militia can only be made a cheap force by making it effective. Some slight increase of expenditure tending to this end would be money well spent.

Some interesting facts and figures dealing with the Militia have recently been collected by the Master-General of the Ordnance, which he has been kind enough to place at my disposal.[1] They serve to show to what a small extent the Militia under present conditions may be looked upon as an effective fighting force, and the way in which (in the expressive language of the Secretary of State for War) it has

[1] I prefer to use these figures rather than those supplied in the report of the Duke of Norfolk's Commission because the former followed a prolonged peace, whereas in the latter case the Militia was suffering from the disturbing influence of a great war.

been "bled white" to feed the Regular Army. The figures deal with a period of 10 years, 1890-1899, and prior to the Boer War. During that period the average strength of the Militia was 110,472.[1] Of these, 35 per cent. were recruits and 13 per cent. men of over 35 years of age. Therefore not more than 52 per cent. could be considered as really effective for active service. If we further put on one side men under 20 years of age, there remained of those between 20 and 35 years of age only 46 per cent., or 51,000 men. It was from this remnant that the then existing Militia Reserve was taken to fill the ranks of the Regular Army during the Boer War. The depleted units of Militia were then filled up with recruits and untrained officers, and themselves despatched to the front and distributed on the lines of communication. Can we wonder that under these circumstances the Commander-in-Chief was anxious about his lines of supply, or formed a poor opinion of the value of the Militia as a fighting force?

As to recruiting for the Army, an average of 13,618 men, or 12·8 per cent. of the whole force, joined the Army annually. Of these, 11,700, or 86·5 per cent., were recruits, and no less than 60 per cent. had not served an annual training.

Fortunately for our immediate purpose, the element of doubt as to the proper use for at least one branch of the Militia is eliminated. A very clear and definite duty has been assigned to the R.G.A. Militia. They are entrusted with the defence of our naval bases and mercantile ports at home against those very raids which even the extreme "blue-water" school admit to be possible. But I do not propose to limit our enquiry merely to this well-defined area. The opinion is gradually gaining ground that in view of the smallness of our Regular Army and the extent of the Empire which it has to defend, it will be necessary in the near future to extend the duties of the Militia beyond these islands.

The possibility of forming companies or batteries of siege and heavy artillery seems worth considering.

We must remember, too, that the formation of field artillery has already been successfully tried in the Militia, and may be further extended and developed.

There are also subsidiary branches of armament, equipment, and administration connected with an army in the field which must necessarily be kept in a state of dormant activity during peace, and which the Militia might be called upon to quicken into life for war. The scheme now submitted will have reference to these various considerations.

It is a hopeful sign that the Secretary of State for War, in his Statement to Parliament on 8th March, admitted that the Militia is not in a satisfactory condition, and that they have in the past had no definite function assigned to them. Those of us who have the best interests of the Force at heart will rejoice that Mr. Haldane is disposed to regard the Militiaman as part of a force which is more akin to the Regulars than to the Volunteers, and that he is fully alive to the fact that the Army cannot be organised without coming closely into contact with the relations of labour and capital.

It seems to me that, speaking broadly, the best hope for the future of the Militia is to treat it as forming that Home Defence

[1] The present strength of the Militia, as given in the current Army Estimates, is 94,428.

Army outlined in the Report of the Duke of Norfolk's Commission, which, while providing for the internal security of these islands in the absence of our Regular Army, shall at the same time serve as a great reserve or second line to that Army, capable, under certain conditions, of being employed outside the United Kingdom. I believe that this result will best be attained by more closely associating the Militia by affiliation with the Regular Army, both for purposes of organisation and training.

The Swiss system, which is favoured by some, and for which Mr. Haldane has confessed a predilection, was rejected by the Royal Commission. They did not regard the initial training as sufficient. Nor could they recommend its adoption as regards the mode in which the Army of that country is officered. The modern method of extending military training to all classes, while shortening its duration, involves the employment of instructors of the highest possible qualifications; these must be professional officers.

The Commission pointed out that the principles which have been adopted, after the disastrous failure of older methods, by every great European State are, first, that as far as possible the whole able-bodied male population shall be trained to arms; secondly, that the training shall be given in a period of continuous service with the colours, not necessarily in barracks; and thirdly, that the instruction shall be given by a body of specially educated and highly-trained officers.

This is not the occasion to deal with the question of universal training for military service. I hold a strong opinion on it which I have before expressed in this theatre, and is recorded in the evidence given before the Royal Commission. We are more immediately concerned with the organisation and training of a portion of the Militia, and how that training is to be carried out, rather than with the numbers to be trained or how those numbers are to be obtained.

The Commission considered that the requisite initial training of a Home Defence Army could be given within one year, followed by annual periods of a few weeks' exercise. If any system of universal military training in schools be adopted, such as that advocated by Lord Roberts, and spoken of favourably by the Secretary of State for War, this contention would receive additional support.

The relation between capital and labour and military organisation is sometimes lost sight of by military experts. There is a limit to the time which a good workman in regular employment can give annually to military training. This was pointed out to the Royal Commission by great employers of labour, such as Mr. T. E. Vickers. (Q 5,485, 5,591, Minutes of Evidence, Duke of Norfolk's Commission.) Before giving my own evidence I consulted three great employers of labour in the north, one being Mr. Vickers and the others a well-known general manager of a railway, and the head of a great engineering firm. They generally agreed that the maximum time that a good workman in regular employment could give annually and consecutively to military training was 14 days. The unskilled casual labourer, on the other hand, can be spared for 6 weeks, or almost any period you like to name, because his place can always easily be filled. If, therefore, a six weeks' annual training be adopted, as recommended for Militiamen by the Royal Commission, you restrict your recruiting to a limited class, and that the least intelligent and

worst educated. If we are to extend our recruiting area, we must shorten rather than lengthen the period of annual training.

On the other hand, there is ample evidence which goes to prove that if you take a young man for his initial military training at the age of from 17 to 20, before he has usually got fixed in regular employment, the length of such training is really immaterial to him, so far as his future prospects are concerned. Indeed, it is conceivable that when the value of military training and discipline is more universally recognised as strengthening character and physique, the trained man will run a better chance of employment than the untrained. In support of this view, I should like to quote the words of Mr. W. W. Lupton, who is personally known to me, and who has had a large experience in an engineering business. Writing in the National Service JOURNAL for January, 1905, he says: "I do not hesitate to say that during 30 years of activity as an engineer and manager of a large body of men, I have generally found that for all purposes, as workmen, draughtsmen, clerks, and labourers, the best at their own job were those who had served in the Navy, Army, Militia, Yeomanry, or Volunteers. . . . . One great factor in Germany's success (as a manufacturing and trading nation) has been her Universal Military Service. . . . I am quite convinced that in the ordinary 30 years of working life, a man will do more and better work in six or seven-and-twenty years if he has a good and strict military training for one or two of them."

Evidence was also given before the Royal Commission in support of this view.

It is not in this country only that the burden of a prolonged training of reservists is being felt. In France, backed even as they are by the obligation to universal service, a movement is on foot to shorten the annual training. On the 28th February last, the French Chamber of Deputies, by a large majority, and in defiance of military opinion, adopted 15 days' training for reservists and 6 days for territorial troops. As in France so in England; soldiers who are responsible for the efficiency of the National Forces will have to consider in regard to training, not only what is best from the purely military point of view, but what is possible under the existing conditions of civil life. I think the general trend of opinion towards shorter periods of military service is likely to make itself felt in other Continental nations in the near future.

The training here advocated for the R.G.A. (Militia) is one which fits in with the conditions of civil life, and which, as I shall hope to prove, gives a more efficient training than is in practice given under the present terms of service. I propose that the initial or recruits' training shall be 12 months, carried out to a large extent under the supervision of highly-trained Regular officers, followed in subsequent years by an annual training of 14 days, supplemented in certain cases by a further training of 14 days, not necessarily consecutive.

The prolongation of the recruits' training to 12 months raises important considerations as to barrack accommodation. From Sir J. W. Murray's "Notes on the Militia," it appears that for the 10 years, 1889-1898, the average yearly number of recruits raised for the Militia was 38,534, or 35 per cent. of total strength. If this percentage be maintained, we should require annually for an establishment of 17,899 Artillery Militia, 6,265 recruits, for whom accommo-

dation in barracks would be required for at least the winter months. As appears later on, the recruits' training would take place for part of the 12 months at the depôt and for the other part at the station of the affiliated Regular units, and we may assume approximately that half the total number of recruits raised would have to be accommodated at each of these two stations at one time.

As the Militiaman's first period of service is for 6 years, 35 per cent. seems an excessive number of recruits to keep the Force at its establishment. This is caused by the annual wastage of the Militia. This amounts to some 37 per cent. of the whole Force, or 40,000 men annually.

The same return gives the causes and numbers of this wastage as follows:—

1. Transfers to Army and Navy ...	14,000	or	13%	of total force	110,000.
2. Discharges by purchase	9,500	„	9%	„	„ „
3. Desertion and absence	9,000	„	8%	„	„ „
4. Invaliding	3,000	„	3%	„	„ „
5. Completion of Engagement ...	2,000	„	2%	„	„ „
6. Minor causes	2,500	„	2%	„	„ „
Total	40,000	„	37	„	„ „

If it were provided that no recruit should join the Regular Army until he had served one training, and as the numbers who join at present without having so served are 60·5 per cent. of the total recruits, it is probable that some reduction would be effected under No. 1 of the above table—say one-sixth. No. 2 might be greatly reduced by increasing the amount of purchase money, as has already been done, and with the enlistment of a better class of recruit with a fixed residence and regular employment in view, No. 3 would undoubtedly be diminished. It is perhaps not unreasonable to expect that the wastage due to these causes might be lessened by 18,000 men, and consequently the number of recruits required annually might perhaps be taken at 20,000, for a strength of 110,000, or 18 per cent. Therefore, 3,222 recruits would be required annually for the Artillery Militia to keep up an establishment of 17,899 Militiamen.

I think we must assume that no proposals for reorganising the Militia will greatly commend themselves to the House of Commons which involve increased expenditure. I believe, however, that with a very substantial increase in the numbers and efficiency of the Militia, which is a cheap Force, some relatively small reduction may be possible in the numbers of the Regular Army, which is a very costly Force. An increase in one direction may be balanced by a reduction in the other. The view, I think, is now very generally held that our Army must necessarily be small, but that it must be of *the very best*. It must be a perfect striking Force, with sufficient weight behind it to give momentum as well as velocity to its blows. The weight should be supplied by the Army Reserve and the Militia. The Army and the Army Reserve should be the steel head of the lance of which the Militia would be the shaft.

The kind of reduction of numbers in the Army which I have in my mind would be rather in the direction of rank and file than of cadres. I would submit that so far as the question of furnishing the

drafts and filling the Reserve permits, our Army, reduced to the lowest possible limits, should be one affording a very large supply of highly-trained officers and non-commissioned officers, sufficient, when supplemented by a somewhat less trained body of Militia officers and non-commissioned officers, to command and administer a large force of mobilised troops.

I would provide for the training of the Militia by a body of highly-trained officers and non-commissioned officers by more closely associating it with the Regular Army. The details of the scheme which I now propose to submit affect only the Artillery Militia. I believe, nevertheless, that the infantry could be dealt with on similar lines, although on that point I do not presume to express a definite opinion.

Organisation of R.G.A. (Militia).

The R.G.A. Militia is nominally affiliated with the R.G.A., but in practice it is not. The one brigade of Militia Field Artillery which exists is apparently not even nominally affiliated with the Regular Army.

The existing and rather haphazard distribution and system of affiliation of the R.G.A. has been revised under a recent A.O. (A.O. 25 of Feb., 1906, and Appendix B). All garrison companies at home and abroad are affiliated with the first five depôts. The Heavy Brigade and Siege Train companies at home and in India are allotted to No. 6 Depôt.

The Militia Artillery Corps are all affiliated with the 6 depôts; but as there is no depôt in Scotland or Ireland, the Irish and Scottish corps are necessarily associated with the English depôts. Thus No. 2 depôt at Gosport has affiliated with it one Militia corps in the Isle of Wight, two in Ireland, and two in Scotland. It would have seemed more reasonable to have one depôt in Ireland and one in Scotland, with which might be affiliated the Irish and Scottish Militia and at least those R.G.A. companies stationed in Ireland and Scotland respectively; but for our present purpose it will be best to take the distribution of R.G.A. depôts and companies as it stands, and see how far it can be fitted in with our proposed scheme.

At present, although each Militia unit is affiliated with a depôt, it is, so far as I know, in no way affiliated with any of the R.G.A. companies belonging to that depôt. What I propose is that every Militia Company should be affiliated with a R.G.A. company, either at home or abroad, belonging to that depôt, and that for purposes of training and mobilisation they should be divided into groups consisting of 2 companies of R.G.A. and 2 of R.G.A. Militia. Where one of the R.G.A. companies of the group was abroad, the two Militia companies would be associated for instruction and training with the R.G.A. company at home. Should both be abroad, it would be necessary to attach the Militia companies to another group of the same depôt.[1]

[1] Of the 108 Companies of R.G.A., at present 44 are at home and 64 abroad. In ten cases, therefore, both of the Companies of R.G.A. of the proposed groups would be abroad.

It is proposed that half of the Militia, comprising men of over 20 years of age and in their first period of service, should be liable for service abroad in case of great emergency, and while so liable should receive an additional bounty. It might be convenient to form one company in each group of these men and the other of men not so liable.

The normal war stations of both Militia companies, unless they were siege train or heavy companies, would be a work or fortress embraced in the general scheme of coast defence, and at that fortress or work the R.G.A. company with which they were affiliated would be stationed.[1]

The 31 existing corps of R.G.A. Militia comprise 181 companies, so that if the proposed reorganisation were adopted, there would be 73 more Militia companies than would be required. Lieut.-General Sir W. G. Nicholson told the Norfolk Commission (Q. 92) that there were 13 corps of Militia Artillery unallotted in the scheme of defence, and which were apparently surplus.

Two of these are in England, one in Scotland, and 10 in Ireland. The 13 corps comprise 73 companies. If, therefore, these corps were disbanded or converted to some other purpose, the numbers of the Militia and Regular companies would be identical.

But as it will be necessary under the proposed scheme to increase the strength of the Militia companies, to bring them up to the Regular establishment, it might be preferable to reduce the number of companies in certain corps while retaining the corps themselves. Or, if it be thought desirable, to extend (as subsequently suggested) the formation of Militia Field Artillery, some of the unallotted corps might be utilised for that purpose. The present peace establishment of a R.G.A. company (5 officers, 154 other ranks; heavy battery 149 other ranks; siege train, 6 officers, 194 other ranks) might possibly be reduced in rank and file, but should, I

[1] To illustrate approximately the increase of establishment that would be necessary to bring Militia Companies up to an equal strength with those of R.G.A., the following war establishments are given :—

	Officers.	Other ranks.	A.S.C. Drivers.	Total.
R.G.A. Coy. (Home Service)	5	194	...	199
„ Heavy Battery...	5	149	7	161 (119 Horses)
„ Militia Coy.	2½	96	...	98½
Increase required G.A. Coy.	2½	98	...	100½
„ „ Heavy Battery ...	2½	44	...	46½

In the present organisation there are 1 or 2 majors in each Corps of Militia Artillery, according to strength; 1 captain per Company; and 3 lieutenants or second-lieutenants to every two Companies. Under the proposed organisation, I would do away with the rank of major in the Militia, and allot 1 captain, 2 lieutenants, and 2 second-lieutenants to each Company.

think, have an increased establishment of "specialists,"[1] some of whom would be available for duty with the affiliated Militia companies when called up for mobilisation, and during the period that must necessarily elapse before their own "specialists" can be brought up to the required standard of efficiency.

It will be seen that a certain number of Militia companies will be affiliated with coast-defence companies of Garrison Artillery allotted to works and fortresses. In the case of mobilisation, it would be an immense advantage for the former to find in the work a body of Regular officers, non-commissioned officers, and "specialists" thoroughly acquainted with the work, the ordnance in use, and the details of manning, and who, in the case of a sudden attack following the outbreak of hostilities, would be mainly responsible for the defence. From the moment of mobilisation the Militia units would daily become more proficient in their duties, and ultimately in the earlier stages of the war, and until absolute command of the sea had been established, there would be 3 companies allotted to the work or section of defence worked up to a high state of efficiency and capable of division into 3 reliefs. When we realise the enormous strain that must fall on those engaged in coast defence, liable at any time of day or night to attack, such a distribution of reliefs would

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[1] "Specialists" are non-commissioned officers and men told off for special duties which require very careful and special training, *e.g.*, signallers, range takers, dial readers, gun layers, etc. The proposed increase of specialists might be as follows :—

		Home Service.	
		Present Establishment.	Proposed Establishment.
S.I T. Company —	Gunlayers	24	48
	Observers	18	30
	Telephonists	6	10
	Other ranks	146	100
	Total	194	188
Heavy Battery —	Gunlayers	12	24
	Rangetakers	1	3
	Other ranks	140	100
	Total	153	127
Coast Defence Co.—	Gunlayers	8% = 12	18% = 24
	D.R.F. Men	5% = 8	12% = 16
	Telephonists	3% = 5	7% = 10
	Other Ranks	84% = 129	63% = 80
	Total	100% = 154	100% = 130

A reduction in Home Establishments effected in—

3 Siege Train Companies at	6 =	18	Rank and File.
6 Heavy Batteries at	26 =	156	„ „
36 Coast Defence Companies at	24 =	864	„ „
Total Reductions ...		1,038	„ „

be none too many. On the other hand, should command of the sea not be in doubt, some of the Militia companies, after a period of embodiment, would be sufficiently good for employment as independent units at any other point in or out of the United Kingdom that might be required.

I would retain the present regimental organisation of the Militia Artillery, which is convenient for purposes of administration and for training under the system proposed lower down.

To illustrate how the proposed change would work, we will take an existing unit of 6 companies on its present establishment, viz., 1 lieut.-colonel, 1 major, 6 captains, 9 lieutenants and second lieutenants (of whom say 3 were of 3 years' service and upwards), and 576 other ranks (excluding P.S.). We will suppose that the corps form 3 R.G.A. companies and 1 Heavy Battery company. It would then comprise 1 lieut.-colonel, 4 captains, 16 lieutenants and second lieutenants (of whom say 5 would have 3 years' service and upwards) and 731 other ranks. With the exception of recruits' training, the annual cost would be less.[1]

The tendency at the present time seems to be to reduce our coast defences, and consequently smaller numbers of R.G.A. will be required. The present estimates will apparently provide for a reduction of 300 guns of those previously allotted to coast defence. On the other hand, it seems probable that a much larger proportion of Heavy Artillery will in the near future accompany armies in the field. This service Militia Artillery might well undertake. Mobility is of less importance than is the case of Horse and Field Artillery, and less skilled drivers would suffice. Siege Train companies might also be formed from the Militia. In both cases the armament and equipment of the units would be kept at their regimental headquarters and used for training and practice.

R.G.A. Militia.

The Raising of Officers.

Before you can train an officer you must get him. The country and Parliament must realise that in the absence of compulsory service the only way to get young officers to join a Service which entails a considerable sacrifice of time and money is to make it worth their while. Lord Lieutenants may give garden parties and Deputy Lieutenants may be threatened with the loss of their commissions, but these expedients will fail as others have failed under existing conditions. As things are now, there is a deplorable deficiency of

[1] There would be practically no increase in pay of officers, the daily pay in the first case being £7 13s. 6d., and in the second, £7 13s. 7d. There would, however, be a larger number of rank and file, but trained as to say 4-5ths for 14 days instead of 27, and as to 1-5th for 27 days (specialists). This works out to a saving of 2,420 days' pay of rank and file per unit of 6, reduced to 4 Companies. There would, of course, be a large increase in the cost of recruits' training for one year, instead of 56 days; but the saving in the annual training would go to mitigate this, and with a really efficient Militia, some reductions could, no doubt, be effected in the rank and file of the service companies.

officers in the Militia Artillery. The February Army List showed a deficiency of 2 majors, 25 captains, and 114 lieutenants and second lieutenants out of an establishment of 35, 181, and 275 of those ranks respectively. Under the proposed reorganisation we shall require for the R.G.A. no majors, 108 captains, and 432 lieutenants. Therefore at present we should have a surplus of majors and captains, but a deficiency of 271 lieutenants and second lieutenants. The Duke of Norfolk's Commission appears to have made no recommendation as to how an adequate supply of officers was to be obtained. It is admitted that the present training is inadequate; but if you increase the necessary time to be given to training you will make it yet more difficult to get officers. There is only one way to get them, in the absence of the ballot or some form of compulsory service, and that is by offering a sufficient inducement to young men, either pecuniary or otherwise, to give part of their earlier years to military service. In my evidence before the Royal Commission I strongly advocated the giving, by competitive examination, of valuable military scholarships, tenable for 3 years at a university. A condition attaching to such a scholarship would be that the holder should serve for a fixed number of years (say 5) in the Militia after leaving the university, or refund the value of his scholarship. I consulted the Vice-Chancellor of a university on the subject, and he cordially approved of the proposal. The only member of the Commission who appeared hostile to the suggestion was Mr. Spenser Wilkinson, and chiefly on the grounds that these scholarships would be more valuable than those already obtainable at Oxford and Cambridge. I think that by this means you would obtain exactly what you want in the artillery, viz., an officer with a good general education up to the university degree standard, and who would soon pick up the military part of his training. If the universities would co-operate, a considerable amount of military knowledge might be acquired during the undergraduate stage.

Increasing the establishment of subaltern officers would have two advantages: (1) A sufficient number would in all probability remain in the Militia to fill the senior ranks, especially if the rank of major were abolished; and (2) It would supply what was universally felt to be a serious want in the late war, *i.e.*, a reserve supply of trained junior officers.

I may mention here that one reason why I advocate the abolition of the rank of major in the Artillery Militia is that by so doing you obviate a possible difficulty as to command when the R.A. and Militia company are serving together.

Training of Officers.

Omitting details of courses on first appointment, courses necessary to qualify for commissions in the R.G.A., and the I. of A. course, under the present regulations, until promoted to command a corps, each officer must (*a*) once in three years attend for one month a Garrison Artillery School of Instruction, or be attached for one month to a company of R.G.A. during the period of company and regimental training. (*b*) An officer *may* attend as in (*a*) every year. (*c*) To qualify for promotion an officer *must* attend as in (*a*) and obtain a certificate.

I would suggest that (*a*) should be amended, to read: "To be attached to his affiliated R.G.A. company during the whole of the

company and regimental training, *i.e.*, 5 weeks." I believe this course would be more useful to a company officer, either as battery commander or gun group commander, than a course at a school of instruction, and he would also become acquainted with the armament of the work to which his unit was allotted on mobilisation.

For the initial training I would adopt the Royal Commission's recommendation, viz., that it should be for six months, and be completed within 12 months from date of appointment. Of these, 2 months should be with the depôt or headquarters of his corps, 2 months at a school of instruction, and 2 months with his affiliated R.A. company or battery, the latter to include, if possible, the company and regimental training.

Recruits' Drill on Enlistment.

The recruits' training would be for 12 months, as already stated. For the first period, say 6 months, at the depôt or regimental headquarters, under the Regimental Staff, assisted by Militia officers of the unit, and for the second period, at the station of the affiliated R.G.A. Company, under the officers of that company, assisted by Militia officers of the unit.

The idea underlying the proposal is, that when a man has once been made a soldier, in the professional soldier's sense of the term, a much shorter period of time is required for annual training to keep him efficient. Habits of obedience, self-respect, and discipline have become a second nature, and all that is required is to bring him up to the mark from time to time in drill and practice. An experiment is, I believe, being tried to prove that you can teach a soldier all that he ought to know, and make him all he ought to be, in a six months' course of training. If that can be done, the question is, of course, by so much, simplified. It is, however, contrary to the belief and practice of all great military nations, and many would argue that twelve months is insufficient for the purpose. It is submitted, however, that the present period of Militia recruits' training is quite insufficient to make him an effective soldier. Nor will even a six weeks' annual training enable you to complete his manufacture. The foundations of the building are unsound, and the superstructure is, therefore, insecure. The plan proposed is also based on the proposition so strongly pressed by the Duke of Norfolk's Commission, that to make a soldier, even in twelve months, his training must be conducted by highly-trained and highly-efficient officers.

Annual Training.

The Present System.

Recruits are called up for 14 days' instruction in gunnery, and specialists are, with their own consent, also called up for instruction for the like period immediately before training. The ordinary training is for 27 days (or for 42 days, when conducted at a work of defence, normally every third year).

Under the present system, there are two things which militate against efficient instruction:—(*a*) Specialists are not efficient when the annual training begins. Some of them have not attended during

the recruits' gunnery course, and their instruction and redrilling, including testing of gun layers, has to be carried on while the rest of the rank and file are being trained in gun drill, fire discipline, and elementary practice. The latter cannot be conducted to any useful purpose except with the aid of well-trained specialists. (*b*) At Regimental Headquarters, there is not sufficient equipment, even where a good up-to-date practice battery exists, to train more than about one-third of the non-commissioned officers and men in their most important duties at the same time. This difficulty is, in some cases, further aggravated by the guns and equipment being required by Volunteer Corps. The result is, that two-thirds of the corps are engaged in other duties, such as musketry, company and battalion drill, elementary repository work, etc., good things, no doubt, in their way, but in no sense essential for Auxiliary Forces, whose whole time should be taken up in learning those duties and those only which they would have to perform in war.

To show how this works out, I may state what happens in the case of the unit I lately commanded when training at Scarborough—the Regimental Headquarters. There is a good practice battery fairly up-to-date, comprising 6-inch, 5-inch, and 3-pounder Q.F. guns; but only two companies can make use of the battery at the same time.

The 27 days' training are always reduced to 19 actual working days, after deducting days of assembly and dismissal, 2; giving in arms and equipment, 1; inspections, 2; Sundays, 3; total, 8. Allowing 4 parade hours per day, and deducting half-holidays, there are actually available 69 working hours during training. But as only two companies out of six can use the battery at one time, there are only 23 working hours per company, the remaining 46 hours being occupied in work which is of little importance.

Proposed System.

In place of the present system, I propose that in the case of a 6-company unit, there should be 4 companies of the strength given above, and that each company should be called up separately in succession for 13 days' training, instead of 27. Three days would be occupied in assembly, dismissal, and giving in clothing, etc., and there would be one Sunday; total 4. The inspection should consist in the inspecting officer being present during the whole of one day's company practice, seeing the camp, books, etc., so that no deduction of working time would be necessary for this purpose. Three hours might be devoted to company drill, etc. There would then be 33 hours available for work in the battery instead of 23 under the present system.

The specialists, if it be thought essential that they should work with their own companies during gun drill and practice, would be called up for 14 days' instruction immediately preceding the assembly of their company. This would result in the enormous advantage of each company from the commencement of its training having the assistance of a trained body of specialists, and I have no hesitation in saying that the value of the training would be thus increased by at least 50 per cent.

There is another alternative that I would submit for consideration. It has already been suggested the affiliated service R.G.A. companies should comprise a higher establishment of specialists than at present.

It is worth considering whether the Militia company, while up for training, might be supplied with specialists from the affiliated service company, the latter, at the same time, undertaking the training of the Militia specialists. By this arrangement the annual training of the latter might also be reduced to 14 days.

Under the proposed arrangement, the annual training of the 4-company unit would, including the training of specialists, be spread over a period of 10 weeks. The Lieut.-Colonel Commanding, and the whole of the permanent staff, should be present. Company officers should come up for 27 days, and be present during the preliminary training of their non-commissioned officers and specialists.

Permanent Staff.

It is suggested that the adjutant should be appointed for 3 years; that specially selected officers should be so employed; and that exemplary service should be considered in connection with accelerated promotion.

The non-commissioned officers should also be specially selected, and should revert periodically to the affiliated service company. Good service with the Militia should be considered in qualification for promotion.

An instructor of artillery should be added to the Permanent Staff, who might be a Militia officer or a Regular. Two sergeants per company should also be added, and these additional appointments might be open to specially qualified Militia non-commissioned officers. I would abolish the rank of Militia-sergeant.

System of Pay.

Pay duties at present take away a Permanent Staff-sergeant in each company from drill and instruction just when he is most wanted, and are always a source of anxiety, and frequently of loss to the officer commanding the company. The quartermaster, with a sufficient clerical staff, should act as regimental-paymaster. Officers commanding companies would still issue the daily pay on a pay sheet, supplied by the regimental-paymaster, but would not be accountants, and need only keep a cash book. They would thus be able to devote more time to the instruction of their companies.

No doubt a good deal of extra work and responsibility will be thrown on the quartermaster by the scheme. Advantage might be taken of this to improve the status and pay of Militia quartermasters, which is apparently at present considerably worse, both as to pay and pension than that of district officer, although both are now promoted from one general roll of the warrant officers of the regiment.

Field Artillery.

There is reason to believe that the formation of Militia Field Artillery, at present only in its experimental stage, can be considerably augmented.

There is at present only one brigade (3 batteries) of Militia F.A. (the Lancashire). The major-general commanding the N.W. District told the Royal Commission that the experiment of the

Militia Field Artillery could certainly be regarded as a success, and their work was very creditable. They had obtained a fair degree of mobility, their driving was very creditable indeed, and he would certainly like to see the experiment extended. (Q. 2,672-78.)

I have made recent enquiry, and am informed that the system is an excellent one; at the end of their 2 months' training the batteries fall very little short of a Service battery R.F.A., and with 6 months' training would be well able to hold their own; the keenness displayed by all ranks is astonishing.

Practice is carried out annually at the School of Gunnery Practice Camp on Salisbury Plain at the same targets and under the same conditions as batteries R.F.A. Last year one battery obtained a 2nd class, and the remaining 2 batteries a 3rd class, and this in spite of the fact that the Militia batteries have only 200 rounds allowed, as against 600 for batteries R.F.A.

The establishment is as follows. (Regimental Establishments, p. 40, q. v.):—Permanent staff (Regulars), 3[1] officers, 118 warrant officers, non-commissioned officers, and men, 30 horses; Militia, 14 officers, 297 warrant officers, non-commissioned officers, and men, 195[2] hired and 30 P.S. horses; total 432.[3]

Up to the present no difficulty has been experienced in obtaining officers or non-commissioned officers and men, although the training is a long one, and the work during training is hard.

Training.

Recruits receive 1 month's training, of which 8-10 days are taken up by vaccination. This appears far too short a time. It seems probable that with a longer recruits' training some curtailment of the annual training might be possible.

Battery commanders, Militia gun-layers, non-commissioned officers and artificers come up for one month before training.

Brigade then assembles for 56 days' annual training and practice.

Officers are trained with their units in F.A. duties and equitation. On joining they do 1 month's preliminary drill, 2 months' training, and 1 month's course either at the School of Gunnery or with a Service battery. After the first year the courses are the same as for R.G.A. (Militia).

The system seems to work admirably and give good results; but the hire and keep of horses for training is costly, amounting to £5,000 per annum.

I submit that as great efficiency at less expenditure could be attained by the same system of affiliation that I have advocated for the R.G.A. (Militia). For this purpose I would affiliate a Militia Brigade with a Brigade R.F.A., and would constitute the latter the training school for recruits in drill and equitation, and the school of instruction for officers in all duties, and for the preliminary drill of officers, non-commissioned officers, artificers and men. The R.F.A. Brigade would be kept at a full

[1] 1 lieut.-colonel, 1 adjutant; one battery is commanded by a major. R.F.A.; the remaining two by Militia officers.

[2] Hired for training by Remount Department.

[3] The present Estimates provide for the formation of two additional brigades of field artillery, establishment as above.

establishment of horses, so that in case of mobilisation a sufficient supply of trained horses would be in readiness to supply the gun teams and riding horses of both Regular and Militia Brigade Divisions. For annual training the Militia Brigade would be supplied with horses by the R.F.A. Brigade.

Under such an arrangement it would seem that a considerable reduction in the permanent staff might be effected. No horses or drivers would be required. The adjutant and non-commissioned officers of the permanent staff might be attached to the Regular Brigade and assist in training recruits. The lieut.-colonel commanding the Militia Brigade, at present a Regular officer on full pay, might be replaced by a Militia lieut.-colonel, as experienced officers of the Force became available, or retired R.A. officers might in some cases be appointed to such commands.

What saving in the Army Estimates could be effected by the development of Militia F.A. here indicated?

The annual cost of a Militia Brigade F.A. under the present system is £21,000; of this £3,000 is for hire of horses and £2,000 for their keep. Some saving would be effected under the latter head, but as I propose that the R.F.A. batteries should be kept at a higher establishment of horses than at present, *i.e.*, guns and wagons fully horsed at war strength, I take no credit for this item, and I put the annual cost of the Militia Brigade at £21,000 - £3,000 = £18,000. A Service brigade costs £39,000 per annum, a difference in favour of the Militia of £21,000.

The Secretary of State for War told the House of Commons recently that there was a surplus of 36 batteries R.F.A., having regard to the number of Regular troops that we were prepared to put in the field. At the same time, he fully recognised the necessity, in view of the experience of modern war, of not hastily making any reduction in this arm.

If it be admitted that with six months' training, Militia F.A., under their present organisation, can be brought up to the standard of Regulars, it is, perhaps, permissible to suggest that at least our surplus R.F.A. batteries might be gradually superseded by Militia. If this were done in the 12 brigades of surplus R.F.A., whose places would be taken by Militia, we should effect a saving of 12 × £21,000 = £252,000 per annum.

Ammunition Columns.

I see no reason why a portion of a Militia unit which supplied a F.A. brigade or heavy batteries should not be organised as an ammunition column, and thus relieve, to some extent, the Regular artillery from a somewhat onerous duty in the field. Some years ago I submitted a detailed proposal embodying this idea, but it was considered to be too revolutionary to be even thought of, and it did not get further than G.O.C. District.

SUMMARY.

Summing up briefly the suggestions submitted for consideration, they are:—

1. To treat the Militia seriously as the main reserve or second line to the Regular Army, available, under suitable conditions, for service outside the United Kingdom.

2. To increase its efficiency, and at the same time its recruiting area, by giving a prolonged training to recruits and a shorter annual training suited to the conditions of civil employment.
3. To reorganise the artillery, so as to render its training more efficient by adopting the above proposals, and by more closely affiliating it with the Regular artillery.
4. To increase the Field Artillery Militia, and to form Militia companies of siege and heavy artillery and Militia ammunition columns. By such increase to render possible some reductions in the Regular artillery.
5. By a more efficient organisation and training of the Artillery Militia as a whole to render available the same number of guns both for coast defence and in the field as at present, but at a reduced cost.

I believe that a scheme such as outlined above, or some other on similar lines, that may be worked out by those who have more experience and wider knowledge than myself, would do much to make the Militia what it ought to be—the backbone of our reserves, and that its recognition as a vital part of our military system would go far towards increasing its popularity with officers and men.

APPENDIX.

Notes on the Militia.

The information contained in these notes is all derived from the published material contained in the annual reports of the Inspector-General of Recruiting, and in the General Annual Report on the British Army, etc. All that has been done is to collect and place together statistics from these two sources extending over a period of ten years—a period sufficiently long to enable a fair average to be deduced. The decade 1890—1899[1] has been taken as being a period during which the condition of the Militia was normal; the years subsequent to that period were disturbed by the abnormal conditions of the war.

A.—Composition of the Militia.

Table I.—Ages of Militia (Including Permanent Staff).

——	Under 17.	17 to 18.	18 to 19.	19 to 20.	20 to 25.	25 to 30.	30 to 35.	Over 35.	Total.
Highest	994	8,496	16,060	14,281	28,516	19,957	16,160	15,458	—
Lowest	769	6,076	12,275	11,734	24,726	17,917	14,904	13,112	—
Average	859	7,096	13,802	12,941	26,935	19,023	15,409	14,407	110,472
Per cent.	1	6·5	12·5	12	24	17	14	13	100

[1] In certain instances it has not been possible to get statistics for 1899; in those instances the period 1889 to 1898 has then been taken, as the tables show.

Table II.—Ages of Recruits (1889 to 1898).

——	Under 17.	17 to 18.	18 to 19.	19 to 20.	20 to 25.	Over 25.	Total.
Highest	622	13,354	14,491	6,146	11,851	2,898	—
Lowest	431	7,628	10,879	3,817	5,226	1,242	—
Average	500	11,141	12,114	4,839	7,959	1,981	38,534
Per cent.	1	29	31	13	21	5	100

The following are the deductions from the above tables:—

Percentage of recruits to total strength - 35 per cent.[1]
,, ,, men over 35 to total strength 13 ,, ,,

Exclusive of recruits there are between 20 and 35 years of age 51,000 men = 46 per cent.

Exclusive of recruits there are over 20 years of age 66,000 men = 59 per cent.

Exclusive of recruits there are under 35 years of age 57,000 men = 52 per cent.

About 32 per cent. of the Militia are under 20 years of age.
,, 20 ,, ,, ,, ,, 19 ,,

Table III.—Statistics of Older Classes of Militiamen.

——	Re-engaged.	Re-enlisted.	Discharged soldiers.	Total.
Highest	35,225	7,488	7,997	—
Lowest	31,422	5,933	6,008	—
Average	33,534	6,579	7,311	47,424
Per cent. on enrolled strength	31	6	7	44

Tables I. and II. have shown that 65 to 70 per cent. of the Militia remains after deducting recruits; this table shows that out of this 65 to 70 per cent., two-thirds, or 44 per cent., of the force, consisted of men who have either served one or more terms of 6 years in the Militia or have been trained in the Regular Army.

Unfortunately, statistics of the services of the Militia cannot be given for want of published *data*; the first table giving such informa-

[1] This deduction is only correct to a limited extent; the total number of recruits in Table II. is the total number enlisted during the course of the twelve months, not the number of recruits who may happen to be serving at any given time of the year; while the total strength of the Militia in Table I. is the strength at a given time of the year. Some deduction has, therefore, to be made, and it is possible that at any given time the Militia may contain only about 25 to 30 per cent. of recruits.

tion will be found at p. 130 of the General Annual Report for 1905. That table shows that of a total strength of 86,491 men, 22,220, or 25·7 per cent., were under 1 year's service, and 13,552, or 15½ per cent., were of from 1 to 2 years' service, etc.

B.—The Militia as a Feeder to the Army.

Table IV.

	Militia.					Regular Army.	
——	Total Effective. (1)	Effectives Infantry. (2)	Total Recruits. (3)	Infantry Recruits. (4)	Joined Regulars. (5)	Total Recruits. (6)	Infantry Recruits. (7)
Highest ...	113,330	96,707	48,774	43,939	15,659	42,700	25,699
Lowest ...	101,032	86,346	33,205	29,109	11,774	28,532	17,246
Average ...	106,295	90,045	39,283	34,983	13,618	35,452	21,723
Per cent. ...	100	84·7	37·4	32·9	12·8	—	—

Table V.—Militiamen Joining Regular Army.

	Total Joined Regulars. (1)	Of those in Column 1.			Of those in Column 1.	
——		Did not serve 1 Training. (2)	Served 1 Training. (3)	Served 2 or more Trainings. (4)	Under 20 years of age. (5)	Over 20 years of age. (6)
Highest ...	15,659	9,681	4,000	2,022	11,647	4,086
Lowest ...	11,774	7,145	3,135	1,494	9,155	2,582
Average ...	13,618	8,222	3,558	1,838	10,381	3,237
Per cent. ...	100	60·5	26	13·5	76	24

Deductions from the foregoing tables:—

89 per cent. of the Militia recruits are for the Infantry Militia.

Assuming this proportion to hold good in the case of the Militia recruits who join the Regulars, and assuming also that the Militia Infantryman generally joins the Infantry of the Line, it seems probable that about 12,000 Militiamen join the infantry of the Regular Army annually.

38 per cent. of the Regular recruits come from the Militia.

55 per cent. of the Regular Infantry recruits come from the Militia.

Assuming those in columns (2) and (3) to be recruits, then 30 per cent. of the Militia recruits, in any one year, join the Regular Army.

Observe that 60 per cent. of the Militiamen who join the Regular Army do so without having attended a Militia training.

C.—Wastage of the Militia.

Table VI.—Causes of Wastage.

—	Died.	Completed Engagement.	Invalided.	Recruits Rejected.	Discharged.		Desertion & Absence.	Joined.		Total.
					By Purchase.	Other Causes.		Army.	Navy.	
Highest ...	503	4,870	4,193	877	11,793	1,402	14,048	15,659	869	—
Lowest ...	335	3,109	2,803	444	7,952	905	7,581	11,774	395	—
Average ...	416	4,004	3,294	613	9,552	1,060	9,899	13,618	598	43,054
Per cent.	1	9	8	1·5	22	2	23	32	1·5	100
		Re-enlisted.					Rejoined from Desertion.			
Average ...	—	2,230	—	—	—	—	1,054	—	—	—
Average Net Wastage ...	—	1,774	—	—	—	—	8,845	—	—	—

The net annual wastage of the Militia is about 40,000 men, or, roughly, 37 per cent. of its total strength. The principal causes of this wastage are, in round numbers:—

—	—	Percentage of	
		Wastage.	Total force of 110,000.
Transfers to Army and Navy	14,000	35	13
Discharges by purchase	9,500	24	9
Desertion and absence	9,000	23	8
Invaliding	3,000	7	3
Completion of engagement	2,000	5	2
Minor causes	2,500	6	2
	40,000	100	37

The small number of men who leave the Militia on completion of engagement is remarkable. The remaining figures speak for themselves. It is particularly worth noting, however, that the discharges by purchase have during the past few years fallen very largely; thus for the twelve months ending 30th September, 1904 and 1905, these discharges only amounted to 5,578 and 4,442 respectively, out of total strength of 86,488 and 85,814, giving a percentage of discharges to total strength of 6·4 and 5·2 respectively, as against a percentage of 8·63 for the decade 1890-99.

The following tables deal with the other most fertile cause of wastage:—

Table VII.—Desertions (all Militiamen).

——	Total Effectives.	Deserters.	Rejoined.	Net Loss.	Per-centage.	Year.
Highest ...	102,032	12,330	1,257	11,073	12·0	1892
Lowest	108,392	7,643	949	6,694	6·2	1895
Average ...	106,295	9,899	1,054	8,845	8·8	—

Table VIII.—Desertions (Recruits).

—	Total Recruits.	Casualties before Training.	Remaining after Casualties.	Absent with-out Leave.	Percentage of Absentees.	Year.
Highest	46,733	19,004	27,729	6,408	23·1	1893
Lowest	36,826	13,305	23,521	2,850	8·2	1899
Average	36,857	16,278	20,578	3,395	16·6	—

Table IX.—Services of Deserters (1889-1898).

——	Under 1 year.	1 to 2 years.	2 to 3 years.	3 to 4 years.	4 to 5 years.	5 and upwards.	Total.
Highest	7,607	2,924	1,251	831	662	1,295	14,025
Lowest	2,782	1,789	870	611	376	725	7,578
Average	4,264	2,174	1,077	709	515	1,004	9,746
Per cent.	43·8	22·3	11	7·3	5·3	10·3	100

It is remarkable that the rate at which recruits desert is nearly double that of the rate of desertion throughout the Militia; and the large proportion of desertions in the first year of service is very noticeable.

The following table is also highly instructive:—

Table X.—Wastage of Recruits.

——	Average.	Highest.	Lowest.
1. Total recruits approved	36,857	46,733	31,323
2. Casualties of recruits between approval and training	16,278	19,522	13,305
3. Recruits absent without leave from training ..	3,395	6,408	2,188
4. Recruits who joined Army not having served one training	8,221	9,681	7,145

Deducting items 4 from 2 and adding item 3 we find that, out of a total of 36,857 recruits approved, there were 11,451 men who disappeared between approval and the first annual training; in other words, after eliminating those recruits who join the Regular Army, 40 per cent. (*i.e.*, 11,451 out of 28,635) disappear between their approval and the annual training.

General Sir Richard Harrison, G.C.B., C.M.G., Colonel Commandant Royal Engineers:—I had not intended to take part in the discussion this afternoon, but I am very glad to have the opportunity of saying a word or two previous to the officers who have been brought up in the artillery—and of whom probably there are a good many here—saying anything with regard to the details of the lecture. Before that more detailed examination of the lecture begins, I should like to say that I have been present during four lectures on the Militia that have been given in this theatre—two on the infantry of the Militia, one on the engineers of the Militia, and one this afternoon on the artillery of the Militia. I think we should congratulate the Council of this Institution on having brought to the front this most important question of the organisation of the Militia. The fact that they have done so must have great weight with all those whose business it is to reorganise our Army, because, as you know, the Council of this Institution is very carefully selected, and is composed of officers whose opinions are worth having. In regard to the details of the lecture, I propose to say nothing, except to remark that I think Colonel Legard has given us an exceedingly interesting and well-thought-out lecture. I had the pleasure of knowing him years ago when he used to come down to the Western District and encamp on Staddon Heights. I know how, even then, he used to consider Army problems, and I am quite sure that all present will appreciate how exceedingly carefully he has thought out the subject he has brought before us to-day. With regard to the Militia generally, I should like to make two remarks. It is sometimes forgotten, or overlooked, that a Militia system gets us out of one very great difficulty, and that is the marriage difficulty. Those who have had intimate connection with our Army know that the marriage difficulty is a very great one. In the Militia there is no difficulty at all in that connection. Any Militiaman can be married; we never ask any questions about whether he is married or not. In the Army, as you know, the marriage question is a great difficulty in many ways, which I need not go into now. I have often thought what an extraordinary thing our marriage system is in the Army. You will remember that when Sir John Moore was retiring at Corunna he left a rearguard of ladies to keep the French army in check at one of the towns in Spain. There is another peculiarity attending a Militia system which we must bear in mind, and which the lecturer has not forgotten, namely, that a Militia system, as I understand it, is arranged so that the labour market of the country does not suffer. Whatever we do in the direction of the creation of a Regular Army, we more or less disturb the labour market; I do not think you can possibly help it. We must do it as little as possible in the Regular Army; but by a Militia system you disturb the labour market still less. The lecturer has told you how he proposes to do it. Of course, there are different ways of doing it. The two points I have mentioned should always, I think, be borne in mind by those who are arguing for a Militia system as against a Regular system, namely, the marriage difficulty and the difficulty of the labour market of the country in which your Army is being organised. With these few remarks I shall

sit down and say no more, but I hope that some of the officers present will give us their experience in connection with the working of the Artillery Militia, consequent on what the lecturer has said.

Colonel H. H. A. STEWART, late Donegal Artillery (Militia) :—Unfortunately I did not get a copy of the lecture, and having been for a few years out of the Militia, I feel that I am rather on the shelf. The last speaker has touched on two very important questions: showing the great advantage the Militia possesses over the Regular Army as regards its having no marriage system, and also owing to the fact that the men in the different districts in the country are called up for their annual training at a period of the year when the labour market is least disturbed thereby—at all events, that has been my experience of thirteen years in the Militia, and over twenty years in the Regular Army. I came here to-day to listen and not to speak, but I had hoped that the lecturer might have made some suggestion for the employment of Militia officers as adjutants of their corps. I have seen several adjutants of the Regular Army appointed to the Militia, and I am perfectly confident that Militia officers of superior qualifications could be readily found to perform the duties of adjutants. Then, with regard to another matter: In these days there is greater difficulty than ever in getting officers to serve in their county Militia regiments, and one great reason is that the landed interest has been so very hard hit of recent years that parents or guardians cannot afford to put the young men into the Militia, and thus let them lose their time with no object. I have for twenty years past suggested that a *proportion* of the adjutancies of Militia regiments should be offered to Militia officers. That would tend to keen competition between the two branches of the Service, the Regulars and the Militia, and you can entail upon Militia officers the passing of any examination you like. I also say that the Staff Colleges should be open to Militia officers, and I am very certain that an excellent body of staff officers could be furnished from the force.[1] Colonel Legard is a Staff College man, and I should like to have his opinion on that point. I served in four regiments of the Regular Army, and in those four regiments there was not a single University graduate throughout my service. I then joined a Militia regiment in the North of Ireland, and there were three University graduates among its officers. I should like to have said more on the subject, but as I had no copy of the lecture I am not prepared with further remarks.

Captain Sir JOHN COLOMB, K.C.M.G., late R.M.A. :—I came here to-day not to speak but to listen. I am very sorry indeed that there is a tendency not to discuss the subject of this paper, which I regret because however able a paper may be, it is in the conflict of opinion and in the discussion which takes place we arrive at the germs of truth. I am afraid that I am a fossil, and have no business to speak on the technicalities of this subject, and if it had not been for the silence which has occurred I

[1] During many years I have advocated, as a right, the representation of the Auxiliary Forces by the employment of *their own officers* on the Headquarters *Executive* Staff at the War Office. These forces have an establishment of nearly half a million men, yet (can it be believed?) until the year 1904 they had no such representation. Now they have three "Assistant Directors"—hardly a moiety, I submit, of their proper quota.—H.H.A.S.

should not have risen with the object of speaking, because most of the audience in this room were not born when I was first of all in the Marine Artillery, and for a short time an adjutant of Militia artillery in the West of Ireland, when the Militia was re-created after its total annihilation or suspension during the Fenian disturbances. But I have studied the bigger problems of Imperial Defence, and I have a very warm place in my heart for the Militia, especially for the Artillery Militia. I think we must remember that whatever Service we are speaking of, we must first of all fix our attention upon the work to be done and upon the exact function that the force has to undertake. It appears to me that, as far as Garrison Artillery is concerned, which is the subject of the paper, we have to remember that the function this force has to discharge is the limited function of the manning, controlling, and management of the sea defences of certain military ports; but we have to remember, in conjunction with that fact, that the condition of modern naval science is making the defence of such places more and more aquatic. In any case, if you are to have economy you must have the Militia Artillery as far as possible trained at the place where they will be wanted in war. When you come to consider the question of the distribution of the Militia Garrison Artillery at the present time, you will find that they are scattered about this kingdom in places where they are not wanted at all; because a hundred years ago there were some forts on the Shannon, you now have Garrison Artillery Militia in the West of Ireland, where they cannot ever be possibly wanted to do any local work; but round Dover and Portsmouth, for example, where you must provide for some defence by means of artillery, what have you got? In the surrounding district you have mostly infantry. Therefore it appears to me that the primary question we have to consider in connection with the Militia Artillery is, where will these men be wanted? and the men should be drawn from the districts round those places. When I brought forward this question before the Institution more than forty years ago, it was part of a general survey of the naval and military requirements of our Empire. I then had a conversation on the subject with a friend of mine, who happened at that time to hold a political position at the War Office, and I pointed this out to him. I said: "You have Artillery Militia where there are no forts, and you have in the places where artillery will be wanted, Infantry Militia." His answer struck me very much, and rather chilled my enthusiasm. He said: "My dear friend, you do not know what a row there would be in Parliament if you asked gentlemen who had always been dressed in blue to wear red, and *vice versâ*." That discloses one of the difficulties which has to be faced and got over by military reformers. The only other thing I would like to say is this: That I have always advocated, and strongly advocated, a closer association between the Militia and the Regular Army and an extension of the area of Militia service from the Kingdom to the Empire. I regard the Militia as suffering from having been stamped out by the popularity of the Volunteers. If you look at the question properly you will see that by the spontaneous creation of the Volunteers a vast force was incontinently thrust into our military arrangements, and the Militia was jostled out of sight; but in my opinion, as the Volunteer force exists, the Militia, and the Garrison Artillery portion especially, ought to be now made available for service anywhere within the Empire. My last point is this: Of course I am not competent to discuss the details of this paper, but Colonel Legard has mentioned that Militia Artillery can be created in a very short time if you treat them properly. That is quite true,

but I extremely regret that he should have advocated that Militia Field Artillery should rather supplant the Regular artillery than supplement it, because when he summed up the conclusions of his paper he showed how cheap such a policy would be. I strongly protest against any idea of that sort. I am entirely with him in what I believe to be the fact, that you can and ought, if you set yourself to work properly, make the Militia, especially the Garrison Artillery Militia, a thoroughly effective force in reserve for service anywhere within the Empire; but I will steadily oppose, and on all occasions have opposed, anything that tends to the cutting down of the field artillery or cavalry of our Regular Forces. The Militia would be cheaper, but it is nonsense to say it could be ready for instant service. I look upon our military obligations abroad as being so great that we have no business to cut down artillery or cavalry available for immediate service beyond sea; but, on the other hand, I agree that we can make the Artillery Militia efficient by a common-sense system, so that it will be an efficient force in reserve to supplement, and not supplant, the Regular Artillery.

Colonel C. E. Yate, C.S.I., C.M.G., Indian Army :—May I say one word to supplement the speech of Sir John Colomb? I am not an artilleryman and I am not a Militiaman, and therefore I have no right whatsoever to speak on the technical part of the question; but I notice that the lecturer has proposed to reduce the thirty-six so-called surplus batteries of Regular Field Artillery and to supersede them by Militia. In a small Army like ours—an Army that must necessarily be very highly organised—surely we ought to be specially strong in our artillery. Ought we not to have a larger number of guns per thousand men than any other nation in the world? I am perfectly in accord with what Sir John Colomb has just said : that the Militia should not *supersede* the Regulars. Let us increase our Militia Artillery as much as we can, and I hope we shall do so; but let us stick to every gun we have got in the Regular Army.

Major E. C. Hawkshaw, late R.A. :—I should like to say a very few words on this subject. In 1878 I was with a field battery at Woolwich, and we were supplemented to war strength by the Garrison Artillery Militia that came down from Hartlepool, so that for several weeks—in fact, I think through the whole of that summer—I was soldiering with these men. We found that when they had been with us for a short time they were capital fellows. None of them had had much to do with a field battery before, but they did their work to the best of their ability, and we parted from them and they from us with the greatest regret. It seems to me, if I may say so, that the main difficulty of the whole thing is the question of officers. May I make a suggestion for what it is worth? The scientific training that we must have in garrison artillery demands constant attention to gun laying, signalling, and science of many kinds day after day, and unless you have officers who are up to the work you will not get the non-commissioned officers and men to carry out their part in the necessary way. Therefore, the whole thing revolves upon the difficulty of getting officers. Do not you think, Sir, it would be possible to make more of an interchanging between the officers of the Garrison Artillery Militia and the officers of the Regular Garrison Artillery? There are always cases in which officers ordered abroad desire for special reasons to stay at home. In those cases the Militia officers would be very glad to be posted to the service units temporarily, if

they could get the chance, both for the sake of the trip and what would be learnt professionally; there need not be any fixing of time one way or the other. Benefits would accrue all round for obvious reasons. There is one other point I should like to refer to, namely, that a very great deal of stress is now being laid, in the papers and elsewhere, upon the question of whether a corps of the Auxiliary Forces in a case of emergency is liable to serve abroad, or whether it is not. Why, bless my heart, in cases of emergency, would not any one of us go abroad to any part of the Empire if we were wanted? If we would not, surely we are not fit to call ourselves Englishmen, much less hold a commission. It is our duty to the State. I was in Japan at one time, and saw a lot of the people there, and noticed constantly that they were always full of the national spirit which carried them through this late war. If anybody had dared to hint that he was not liable for service where he was wanted he would be told to commit the happy despatch as soon as he liked; in fact, he would be made to do so whether he liked it or not. And yet we allow men who wear His Majesty's uniform to quibble as to whether, in cases of national emergency, they are liable for foreign service! We have to ask them, in fact, whether they will be kind enough to defend their country! Surely such an idea as this should be firmly suppressed. I am distinctly averse to allowing anyone to join with such ideas.

Colonel W. TYLDEN, R.F.A.:—With your permission, Sir, I should like to ask one or two questions. I am a field artilleryman, and there are one or two things I should like to know in connection with Colonel Legard's scheme for employing the garrison artillery in the field in conjunction with field batteries. I had some conversation with a colonel of the Militia Garrison Artillery on the subject of training some of the unallotted Artillery Militia units as ammunition columns, and I should like to have Colonel Legard's opinion as to whether he thinks he could get the Militia to take up that job. I want to ask him, too, if he will kindly tell me, when he says that a service brigade costs £39,000 a year, whether he means a brigade placed on a war establishment or a brigade on the present lower establishment basis, because if he means the lower establishment basis, before he can attach any Militia Field Artillery for training he would want a tremendous increase in the establishment and the horses, if the Militia is to be trained in any way at all. With the lower establishment, the Regular batteries have very hard work to keep up as it is now. Of course, he says in the paper that they must be kept at a high establishment and be fully horsed and at war strength; but what I want to find out is whether that £39,000 refers to a service brigade on those terms.

Colonel A. P. PENTON, R.A., Commandant, Ordnance College:—We have heard a great deal to-day about the field artillery side of the question, and I should like to say just a word about the garrison artillery proposals, with which branch of the Service Colonel Legard has lately been connected. He proposes in his paper that companies of the Militia Artillery should be attached to companies of the Royal Garrison Artillery, and should work with them and train with them as far as possible for their annual training. I am sure, speaking as a Royal Artilleryman, the Royal Garrison Artillery would be very happy to welcome the scheme, and learn to work in peace time with the men with whom they would have to work alongside of in time of war; but I think there are very great difficulties in the way of carrying out this proposed training. For instance,

if you take the district that Colonel Legard belonged to—the North-Eastern District—there are three Artillery Militia regiments in that district. As six companies are proposed for each Militia regiment, this would mean that eighteen companies from this district would have to be trained annually with the Regular companies of the Garrison Artillery. But there are no Regular Garrison Artillery beyond a depôt in the North-Eastern District. There is a small force of Garrison Artillery in Scotland. All the training of the Militia Artillery as now proposed would have to be carried out away from the district. This means that you would have the expense of training your Militia Artillery every year in outside districts, and the expense would be very considerable. I know what the difficulties are in training the Auxiliary Artillery in Colonel Legard's district. In this district there were three Militia Artillery regiments and some seven Garrison Artillery Volunteer Regiments, with only one practice battery in the district. The training season is not very long, and the crush we had at that practice battery was very great, because a large proportion of the Volunteer regiments, and perhaps two Militia regiments had to train at this one battery during the whole of the practice season. I know that Colonel Legard's regiment once or twice suffered because they could not get the use of the practice battery when they wanted it; but of course this would be obviated as far as the Militia is concerned by the training of the Militia companies out of their own districts, and by their training in works of defence. There is another thing which militates very much against Militia efficiency, I think, and that is the way we take our recruits from the Militia regiments. I do not know whether Colonel Legard approves of the idea, that after training the recruits for twelve months, as he proposes, that we should try as we do now to get the recruit, after his twelve months' training to enlist into the Regular Army. I think by doing so we would waste a lot of time; I do not think it would be very beneficial to the Militia to train a man for a year to fit him for the Militia, and then to enlist him into the Regular Army. I hoped that we should have heard some Militia officers speak this afternoon and point out some way of working out the salvation of their branch of the Service. Speaking as a garrison gunner, I think we all owe Colonel Legard a very great debt of gratitude for the way in which he has put the case of the Militia Artillery before us this afternoon.

Lieut.-Colonel H. M. Slater, R.A.:—With regard to the remarks made by Colonel Penton on the subject of the Militia recruits, I think I may say a great many recruits join the Militia for the benefit of the training and the food they get, and so that they can grow up to the required standard. I have had many recruits brought before me who have not been quite up to the standard, and they have wanted to be made fit for enlistment in the Regulars. As a rule, I defer approving them until they have fully reached the standard for the Regulars; but I think many of these men would not join the Militia at all except with the hope of eventually getting into the Regular Artillery. As regards the twelve months' training which Colonel Legard suggests for recruits on enlistment, if that is carried out in barracks it will mean that a very considerable augmentation of existing barrack accommodation will have to be made, and that of course will entail a very heavy expenditure. Augmentation of barrack accommodation is, I believe, anathema with the present Government.

Colonel LEGARD, in reply, said:—I must first of all thank those who have been kind enough to take part in the discussion for the favourable way, on the whole, in which they have received my remarks. Really, hardly any serious criticism has been made on the paper; and any slight criticism that has been made is due, perhaps, I think, to some slight misunderstanding of what I intended to say. Sir Richard Harrison alluded to the Militia having solved the marriage difficulty. I would remind him that it was not by any means solved when the Militia was embodied; it was surprising to find the large number of men who had wives, and of course those wives had to be supported. Not only were they at the time supported out of public funds, but they were also supported by private subscriptions, and many of them were very much better off than they had been at any other time during their lives.

General Sir RICHARD HARRISON:—That only occurs when there is a war.

Colonel LEGARD:—Then Colonel Stewart suggested the employment of Militia officers as adjutants. I am afraid I cannot quite go with him in that. I think it is possible that, in certain cases, we might find Militia officers who could be brought up to the level of efficiency of the Regulars, but I think they would be exceptional cases. I would personally rather that greater care should be taken in selecting officers as adjutants for the Militia, and that they should never be appointed for more than three years, so that a man would come in fresh from the Army and thoroughly up-to-date. I think the Militia officers themselves would, on the whole, probably appreciate that arrangement better than having one of their own officers as adjutant, although I do not say that you can never find a Militia officer who is not qualified to do the work of an adjutant. With regard to the question of the admission of Militia officers to the Staff College, it probably would be some benefit to officers of the infantry, but I doubt very much whether Militia officers in the artillery would gain very much by the instruction. I cannot say myself, from my own experience of the Staff College, that I gained very much information that has been useful to me as a gunner; but, still, I think it might be desirable for the infantry. Sir John Colomb alluded to the present policy of the distribution of the Artillery Militia, and suggested that they should be distributed nearer the points where they would be wanted on mobilisation. That no doubt would be a very good thing if it could be carried out, but I am afraid we should at once be met by the recruiting difficulty. For instance, if you take the Devon Artillery, which is recruited close to Plymouth, the whole of that district is so tremendously over-recruited both by the Navy, by the infantry, and by other forces, that the Devon Artillery has always had very great difficulty in getting men. Up in the North, where I happen to live, we have no difficulty at all in getting men; and although there are no fortresses in our immediate neighbourhood where we are wanted, still we are by that means, being located in that particular area, able to get the men.

Sir JOHN COLOMB:—But there are Militia Infantry in Devonshire; it means transferring from one branch to the other.

Colonel LEGARD:—If the Infantry Militia were transferred to the North, and the Artillery Militia were transferred to the South, my objection would not have very much force; but, as a matter of fact, that

is the difficulty in a great many of these places like Portsmouth and Plymouth, that the country is so denuded of recruits that you cannot get as many as you want. I did not at all mean to suggest that the Garrison Artillery should be supplanted by the Militia Artillery; what I rather had in my mind was that they should be supplemented. What I suggest in my paper—it is shown in detail in a note—what I suggest is that the Garrison Artillery should have a much larger establishment of specialists, men who have a very high training, and that you might reduce somewhat the establishment of ordinary gunners. You could soon train the Militiamen up to the standard of the ordinary gunner. I do not at all mean that you should reduce the number of companies of Garrison Artillery, but I think you might supplement them by filling the places of the gunners by Militiamen, especially if you had a strong body of highly-trained specialists. Colonel Yate questioned the advisability of my suggestion for reducing our present establishment of Field Artillery. I must confess that I put that forward with very great hesitation. As an old gunner myself, I should deplore any great reduction of the Regular Artillery. I quite recognise the enormous importance to us, having a very small Army, of having that Army supported by a very powerful artillery, even in excess of the proportion that is usually considered necessary in Continental Armies. I perhaps spoke rather too strongly on the point. What I feel is, that it is conceivable in the future that some economising War Minister may insist upon some reduction in the artillery, and then, when that time comes, I think it would be far better if we were able to supply some really effective force of Militia Artillery in its place. All Royal Artillerymen and all soldiers would rather have the real artilleryman than the more or less make-believe—the Regular soldier rather than the Militiaman; but, failing the Regular soldier, I would rather have a Militiaman than nothing at all. I think the suggestion made by Major Hawkshaw of the interchange of officers between the Royal Artillery and the Militia Artillery is exceedingly valuable. I have on several occasions had the advantage of having Regular officers attached to me during training, and we have always found that they have been a great deal of help to us, and we have always worked extremely well together. I think it is quite possible also that many Militia officers, if they had the chance, would be glad to take part in foreign service in place of some Regular officers who desire to serve at home. Colonel Tylden asked me whether I thought the Militia would take up the duties of the ammunition column, and I believe another speaker also asked the same question. That, of course, is a very difficult question to answer, unless you actually try the experiment. I think myself it is very probable that the Militiamen would take up the duties if the work was made sufficiently interesting, and if it was recognised as part of their duties that they would be actually called upon for service outside the United Kingdom in case of war. If you give an officer or a man an opportunity of going on service he would practically take up almost any duty. What I had in my mind when I first made the suggestion was that the ammunition column and the brigade of Militia Artillery or Heavy Artillery should be raised from one unit, so that one part of the unit would be the ammunition column and the other would be a brigade of Field or Heavy Artillery. Then a question was asked as to the cost of the brigade of Field Artillery being £39,000. The figures were supplied to me, and my impression is that they apply to the present peace establishment.

Colonel TYLDEN :—I think that will raise your figures a good deal.

Colonel LEGARD:—On the other hand, I would point out that my Militia figures also apply to the present existing establishment, so that it is comparing one thing with the other. If the peace establishment of the Regular Artillery costs £39,000, the cost of the war establishment of course would be higher. The peace establishment of the Militia Artillery is only £18,000; of course its war establishment would be higher. I am comparing the peace establishment in one case with the peace establishment in the other.

Colonel TYLDEN :—It means that you will not be able to train them with the peace establishment; you must have the war establishment in the Regular Army before you can train the Militia.

Colonel LEGARD :—Quite so. I propose that the existing Field Artillery should be increased as regards horses up to war establishment. Colonel Penton alluded to the difficulty of training the Militia Garrison Artillery with the Regulars in districts where there were no Garrison Artillery companies. I did not contemplate that that training should take place always at the country station of the Garrison Artillery company. My idea was that the specialists might perhaps always be trained with the Regular companies, and the Militia companies would be sent to train with their affiliated Royal Artillery companies every third year as they do at present, and in the other two years they should train at their headquarters, as they do now, but that the training should be distributed over a longer period. I have not made any suggestion as to the recruits joining the Regular Army after they have completed their twelve months' service. Personally I have always done my best to encourage Militiamen to go into the Army, and I do not see any reason why a man when he has done his twelve months in the Militia should not go into the Army if he likes to do so; but I would like to get him for twelve months in the Militia and let him serve one training before he joins the Regular Army. I quite corroborate what Colonel Slater has said; he was my last commanding officer, and is very well up in the Militia. It is perfectly true that a great many recruits do join the Militia on purpose to go into the Army; they go into the Militia to grow. They do not look on the Militia as a permanent service. I think about 25 per cent. of my own recruits—I might almost say 50 per cent.—I never used to see; Colonel Penton and Colonel Slater used to snap them all up and get them into the Royal Artillery before I had a chance to see them. But I do not grudge them the men; I think it is the duty of the Militia to do their best to support the Regular Army, which is the real thing. The Regular Army is far more important than the Militia. I thank you very much for the very kind way in which you have listened to my remarks.

The CHAIRMAN (Major-General Sir J. Wolfe Murray) :—It is laid down as one of the duties of the Chairman that he will give his own views on the discussion and on the subject, unless special reasons prevent his remaining to the end. I have been able to remain to the end; but there are special reasons for which I must ask to be excused from giving my views on the subject, though I will try and say something about the discussion. This subject of the Militia is perhaps one of the most important connected with Army Reform that you can touch upon at the present time; and I may say, without, I think, any breach of confidence what-

ever, that it is engaging a very great deal of attention at the War Office at the present moment. It is therefore quite impossible for me to touch at all upon the subject in its essence without going into questions which might lead to inconvenient disclosure. I may say, in that connection, that the Council of this Institution sent a special invitation to the Secretary of State for War to be present at this lecture and the subsequent discussion. Mr. Haldane answered that he was extremely obliged for the very kind invitation, but that he much regretted the pressure of his Parliamentary duties prevented his accepting the invitation, adding that he would read the copy of the lecture sent to him with very great interest. I think I can assure you that not only will he pay great attention to the lecture, but that he devotes very much of his time to considering the present position in regard to the Militia. I think Sir Richard Harrison, when he opened his remarks by saying of what great value it was that this Institution should bring forward these particular topics, touched a very useful point. I am sure the lectures which are given here do us an immense deal of good, and the lecture we have listened to to-day is an instance in point. What has been urged to-day in regard to the many points that have been raised must give us all food for a great deal of thought. There are very many valuable suggestions in this lecture, and in the other lectures which have preceded it, which all of us must, I think, take to heart very much. Colonel Stewart, in advocating the employment of Militia officers occasionally as adjutants, as I understood him, rather contended for elasticity in certain points in regard to the Militia.

Colonel Stewart :—Elasticity and efficiency.

The Chairman :—Quite so. But I think what you wished to urge was to make the conditions of Militia service perhaps a little more elastic in the future than in the past. Sir John Colomb, I think, brought home to us all what the fundamental considerations of any reformer must be, and he also, I think, presented to us in a very clear light some of the difficulties that the reformer meets with at the outset of his career. He pictured to us very forcibly how the distribution, and to use, perhaps, a rather germane word, the dislocation, of our Army has grown up. That dislocation has grown up owing to a set of circumstances which no longer obtains, and the consequence is that, as changes have supervened, the distribution which fitted at one time is no longer applicable. Again, Sir John Colomb pointed out—and nobody knows it better than he—the difficulty which the Army reformer encounters in trying to cope with these things, because the moment you attempt to remedy any of these defects in the system you are met with a howl from vested interests, which perhaps makes itself more loudly felt in the House of Commons than anywhere else. I should like, if I may, to defend Colonel Legard from the attack which was made upon him of trying to fix the proposal for the reduction of the Regular Artillery upon him. As I read the lecture, I thought he clearly attributed that proposal to the source from which it originally emanated, and that he merely took it up and amplified it as presenting to his mind the most reasonable way out of the difficulty. The lecture, from its heading, might have been expected to deal with the artillery portion of the Militia mainly; but fortunately, as I think, Colonel Legard did not limit himself to the narrower field, for he gave us a much wider view of the Militia generally. That being so, I propose to place before you certain remarks and deductions which may possibly prove

of interest. In the first place, so far as I can judge from the figures which are available, the Artillery Militia appears to have pretty well retained its popularity, and though there has been some falling off in numbers, it is very much less than that which has occurred in the infantry portion of the force. Colonel Legard alluded in his lecture to certain notes with which I have furnished him. At the time I furnished him with those notes I had no thought that he was going to quote them in his lecture, and I had no intention really that he should have quoted me at all. But as he has done so, I may say that from the figures I have furnished to him and others I deduce that during the ten years prior to the South African war the average strength of the artillery was, roughly, 14,500, and the average number of recruits which they took annually was 3,800. The latest annual report of the Director of Recruiting and Organisation for the year ending 30th September, 1905, shows that the strength of the Artillery was 13,254, and the number of recruits was 3,823. Thus there has been a falling off in numbers of about 8½ per cent.; but there appears to be no diminution in the numbers who are ready to enlist. This is an interesting point connected with the artillery portion of the force. If we turn, however, to the infantry we find a different state of affairs. For the decade ending 1899, the effective strength of the infantry averaged 90,000 men; it has now fallen to 69,629, a decrease of 22¼ per cent., aggregating more than 20,000 men. The average number of infantry recruits enlisted annually for the period mentioned was close upon 30,000; in the last Militia year it was only 24,562. Although General Miles's report brings out certain causes which have led to this diminished number of recruits, it would appear on the face of it that there is not quite the same readiness to enlist in the infantry as in the artillery; and that there is some difficulty in recruiting for the former arm. There is probably some explanation of this marked difference which is worth investigating. It is a point that occurs not only, I believe, in connection with the artillery of the Militia, but also in the case of the artillery of the Regular Forces. It seems that the artillery maintains its popularity at times when the infantry portion of the force cannot attract recruits. But I will pass on to some other and more general considerations to which a somewhat cursory survey of these Militia statistics have led me. At first sight it might appear that the falling off in the effective strength of the whole Militia force—it has gone down from an average of 106,000 for the decade ending 1899 to under 86,000 at the present time—is attributable to the falling off in infantry recruits above mentioned; but this, as I think I can show, is not necessarily a correct deduction. The decreased intake of recruits has almost exactly been balanced by diminished wastage in other directions. Two of the most fertile sources of loss to the Militia used to be desertion and discharge by purchase, these causes being accountable during the 1899 decade for an annual wastage of nearly 19,000 men. The losses from these causes have of late years been steadily diminishing, and in the year ending September, 1905, they amounted to only 8,388. Thus it is clear that, for the last year at any rate, the diminished intake of recruits of all arms, which was 9,000 less than the average of the decennial period, 1891 to 1899 (30,000 as against 39,000), was more than counterbalanced by the lessened loss from the two principal causes of wastage, which gave us a gain of some 11,000. The point I make, therefore, is that although you have less recruits you have not diminished your force, because you have diminished the wastage almost exactly to an equal amount. We must look elsewhere, therefore, for the true cause in the falling off of the strength of the Militia, and this, I

think, is to be found in the decreased number of re-engagements in the force. For, whereas in the 1899 decade there were on an average 40,000 re-engaged and re-enlisted men serving in the ranks of the Militia, there are now only to be found just under 19,000 men of those classes; in other words, the fall in the effective strength of the Militia of 20,000 men almost exactly coincides with the diminution of 21,000 men which has occurred in the numbers of these two valuable classes. The percentage of these two classes to the total effective strength used to be 37; it is now only 22—a difference of 15 per cent. If this assumption as to the cause of the falling off in the strength of the Militia is correct, it is perhaps not impossible to find a remedy for it. At all events, the figures which I have quoted afford a certain amount of food for study, and I commend them to your careful notice. I will only again say, as I said at the beginning, that I think the opportunity which has been afforded us here this afternoon of looking into questions of this kind can do nothing but the greatest good, not only to this Institution, but, I hope, to the public at large. I now ask you to join with me in according a hearty vote of thanks to Colonel Legard for the pains which he has taken to bring the subject under our consideration this afternoon.

DESCRIPTION OF THE BATTLE OF THE SEA OF JAPAN ON THE 27TH-28TH MAY, 1905.

WITH DIAGRAMS AND A CHART.

Translated by permission from the May No. of the *Marine Rundschau.*
By Captain R. H. ANSTRUTHER, R.N.

IN the course of last winter several doubtful points in connection with this battle were cleared up, partly from the narratives of eye-witnesses which were published in various Russian newspapers, partly from the written defence of Rear-Admiral Nebogatoff, and also from various utterances of Vice-Admiral Rodjestvenski; thus it has become possible, with the aid of Admiral Togo's official report, to give a much more accurate description of the great battle than that which was given in the September number of this magazine last year.

1. THE RELATIVE STRENGTH OF THE OPPONENTS.

	Japanese.	Russian.
Battle-ships	4	8
Coast-defence ships	2	3
Armoured cruisers	8	3
Protected cruisers	17	5
	31	19
Destroyers	21	9
Torpedo-boats	60	about —
	81	9

See Table for ships composing the two Fleets.

The Japanese ships were, without exception, painted an almost invisible grey colour, whilst the Russian ships, painted black with yellow funnels, stood out well.

2. The Russian Advance.

After Vice-Admiral Rodjestvenski had effected his junction with the division of Nebogatoff, undisturbed by the enemy, he put to sea on the 14th May, 1905, from Port Dayot on the coast of Annam; all his ships carrying at least one and a-half times their coal allowance, and the battle-ships double. In the South China Sea he cleared for action, wooden fittings, tables, stools, and chests were thrown overboard; on the upper and battery decks, splinter nets were fitted and traverses rigged out of wet hammocks and tarpaulins, which did good service during the action.

The fleet passed south of Formosa, through the Balingtang channel, where they coaled on the 18th May, and parted company with some of the transports; then steered towards the north to the eastward of Formosa without seeing anything of the enemy. On the passage, Rodjestvenski dispatched some of his auxiliary cruisers, which up to then had been scouting, for commerce destruction. As the Russian admiral was not hindered by his adversary, the choice of route lay with him; he could either go direct through the Straits of Korea or take the roundabout route to the northward of Japan. In the first case he would have to be prepared to meet the whole of the Japanese fleet, which was an assumption that he, as a matter of fact, had made, as he considered that an engagement was unavoidable, but thought that he would be able eventually to reach Vladivostok after some losses on both sides.

Amongst the officers and men of the fleet, who had no idea of their leader's intentions, it was expected that the longer route would be adopted, and they were strengthened in this opinion by the large amount of coal taken in, until suddenly, quite contrary to their expectations, Rodjestvenski steered for the Yang-tze. There, 30 miles from the mouth, he coaled again, and sent the majority of the remaining transports to Shanghai.

If Admiral Togo had, up until then, been in any doubt as to the route which the Russian fleet would take, he could now assume with tolerable certainty that they would come through the Korean Straits. On the 26th May, in the evening, they were off the Straits, the auxiliary cruiser "Ural" began to intercept Japanese signs with her powerful Marconi apparatus. The Japanese scouting squadron, whose proximity was thus made known, consisted apparently of auxiliary cruisers, and were on a line of bearing Monteballo—Quelpart—Goto Islands, an inner line of scouts, composed of the 3rd Squadron and Dewa's Division, watched the passages east and west of Tsushima. The main body of the fleet were all in Masampho Bay.

This Bay, also called Douglas Bay, is admirably adapted for a harbour of exercise, and Togo had chosen it as a rendezvous for his fleet, giving orders that this was to be kept secret. He had time, after the destruction of the 1st Pacific Squadron, to put all his ships in thorough repair and at the same time to keep his men up to a high state of efficiency by constant drills.

Composition of the two Fleets:—

JAPANESE.

Commander-in-Chief and leader of 1st Squadron, Admiral TOGO.

1st Squadron.	*2nd Squadron.*	*3rd Squadron.*
Chief of the Staff, Rear-Admiral KATO.	Leader— Vice-Adm. KAMIMURA.	Leader— Vice-Admiral KATAOKA.
1st Division.	*2nd Division.*	*5th Division.*
Vice-Admiral MISU.	Rear-Adm. SHIMAMURA.	Rear-Adm TAKEOMI.
Battle-ships.	Armoured Cruisers.	Protected Cruisers.
Mikasa.	Izumo.	Itsukushima.
Shikishima.	Azuma.	Matsushima.
Fuji.	Tokiwa.	Hashidate.
Asahi.	Yakumo.	Armoured Cruiser.
Armoured Cruisers.	Asama.	Chiyoda.[1]
Kasuga.	Iwate.	Coast-Defence Ship.
Nishin.		Chinyen.
3rd Division.	*4th Division.*	*6th Division.*
Vice-Admiral DEWA.	Vice-Admiral URIU.	Rear-Admiral TOGO, (the younger.)
Protected Cruisers.	Protected Cruisers.	Protected Cruisers.
Kasagi.	Naniwa.	Akitsushima.
Chitose.	Takachio	Suma.
Niitaka.	Tsushima.	Izumi.[1]
Otowa.	Akashi.	Yayeyama.
Tatsuta.	Chihaya.	(despatch vessel).
(despatch vessel).	(despatch vessel).	

7th Division.

Rear-Admiral YAMADA.

Coast-Defence Ship.	Gun-boats.
Fusoo.	Maya.
Gun-boats.	Tsukushi.
Banjo.	Akagi.
Chiokai.	Sumida.
Uji.	

FLOTILLAS.

a. 21 destroyers in 5 Divisions.

Leaders.—Captains Fusimoto, Yajima; Commanders Yoshijima, Suzuki, Hirose.

b. 18 to 20 groups of torpedo-boats of 4 boats each, of which 16 groups took part in the action. The names of the group leaders are Lieutenants Fukuda, Kawase, Fusimoto, Otaki, Wakabagashi, Aoyama, Kawada, Seko, Kondo, Matsuoka, Kubo, Ogawa, Sakamoto, Narutomi, Wada, and Ibara.

[1] It is strange that the fast "Chiyoda" should have been attached to the slow 5th Division, and the slow and heavily armed "Izumi" to the fast 6th Division. Perhaps there is a mistake.

Special Squadron.

Rear-Admiral Ogura.

Auxiliary Cruisers—

America Maru	Ringo Maru	Haijo Maru.
Nippon ,,	Sado ,,	Keijo ,,
Hongkong ,,	Tainan ,,	Manshu ,,
Iwata ,,	Taichin ,,	Koryo ,,
Shinano ,,	Daijin ,,	

Russians.

Commander-in-Chief and Leader of the 1st Division.—Vice-Admiral Rodjestvenski.

1. Battle-ship Division.

Knjas Ssuworoff.
Imp. Alexander III.
Borodino.
Argol.

Cruiser Division.

Rear-Admiral Enquist.

Oleg.
Aurora.
Dmitri Donskoi.
Vladimir Monomach

Auxiliary Ships.

Ammunition Ships.

Anadyr.
Irtysch.

2. Battle-ship Division.[1]

Osliabya.
Sissoi Veliki.
Navarin.
Adm. Nakhimoff.

Light Cruiser Division.

Svietlana.
(Captain Schein, Senior Officer).
Almas.
Shemtschug.
Izumrud.

Repair Ships.

Kamtschatka.

Transports.

Korea.

Tugs.

Russ.
Swir.

3. Battle-ship Division.

Rear-Adm. Nebogatoff.
Imp. Nikolai I.
Gen.Adm. Apraxin.
Adm. Senjawin.
Adm. Uschakoff.

Auxiliary Cruisers.

Ural.

Destroyers.

9.

Hospital Ships.

Orel.
Kostroma.

Detached before the Action.

(A) *Auxiliary Cruisers.*

Kuban.
Terek.
Dnjepr.
Rion.

(B) *Transports.*

Tambow. } to Saigon.
Merkurij. }
Jaroslav.
Voronesh. }
Vladimir. }
Livonia. }
Kuronia. }
Meteor. } to Shanghai.
Kiew. }
Kitai. }
Xenia. }
Hermann Lerche. }
Stroganoff. }

[1] Rear-Admiral Folkersahm died two days before the action.

Guns.

JAPANESE.							RUSSIAN.						
—	In inches.						—	In inches.					
	12½	12	10	8	6	4·7		12	10	9·2	8	6	4·7
Fuji	—	4	—	—	10	—	4 Borodino class ...	16	—	—	—	48	—
3 Mikasa class ...	—	12	—	—	42	—	Osliabya	—	4	—	—	11	—
Chinyen	—	4	—	—	4	—	Navarin	4	—	—	—	8	—
							Sissoi Veliki	4	—	—	—	6	—
4 Asama class ...	—	—	—	16	56	—	Imp. Nikolai I. ...	2	—	4	—	8	—
2 Yakumo class ...	—	—	—	8	24	—	Adm. Uschakoff } ...	—	8	—	—	—	8
Kasuga	—	—	1	2	14	—	Adm. Senjawin }						
Nishin	—	—	—	4	14	—	Gen. Adm. Apraxin ...	—	3	—	—	—	4
Naniwa } ...	—	—	—	—	18	—	Dmitri Donskoi ...	—	—	—	—	6	10
Takachio }							Adm. Nakhimoff ...	—	—	—	8	10	—
3 Hashidate class ...	3	—	—	—	—	34	Vladimir Monomach...	—	—	—	—	5	6
Kasagi } ...	—	—	—	4	—	20							
Chitose }							Aurora	—	—	—	—	8	—
Izumi	—	—	2	—	6	—	Oleg	—	—	—	—	12	—
Chyioda	—	—	—	—	—	10	Svietlana	—	—	—	—	6	—
Akitsushima	—	—	—	—	4	6	Shemtschug } ...	—	—	—	—	—	12
Suma } ...	—	—	—	—	4	12	Izumrud }						
Akashi }													
Niitaka } ...	—	—	—	—	12	—							
Tsushima }													
Otowa	—	—	—	—	2	6							
3 Despatch boats ...	—	—	—	—	—	7							
Total	3	20	3	34	210	95		26	15	4	8	128	40

i.e. 60 Heavy Guns. 305 Medium. 53 Heavy Guns. 168 Medium.

3. THE DAYLIGHT ACTION.

The Fleets Approaching.

On the 27th May, at 5 o'clock in the morning, the auxiliary cruiser "Shinano Maru," which was in the scouting line, sighted the Russian Fleet and signalled by wireless telegraphy that the enemy was in sight, in square No. 203, and apparently making for the eastern passage. She herself was not seen. At 7 a.m. the "Izumi," the port wing ship of the inner line, signalled that the enemy was 25 miles

north-west of Ukushima, steering north-easterly. Between 10 and 11 a.m. the Divisions of Dewa, Togo the younger, and Kataoka, got into touch with the enemy.

The weather was not clear, fog here and there; the wind was from the south-west—4 to 5—and a heavy sea was running.

DIAGRAM I.

(Daylight)

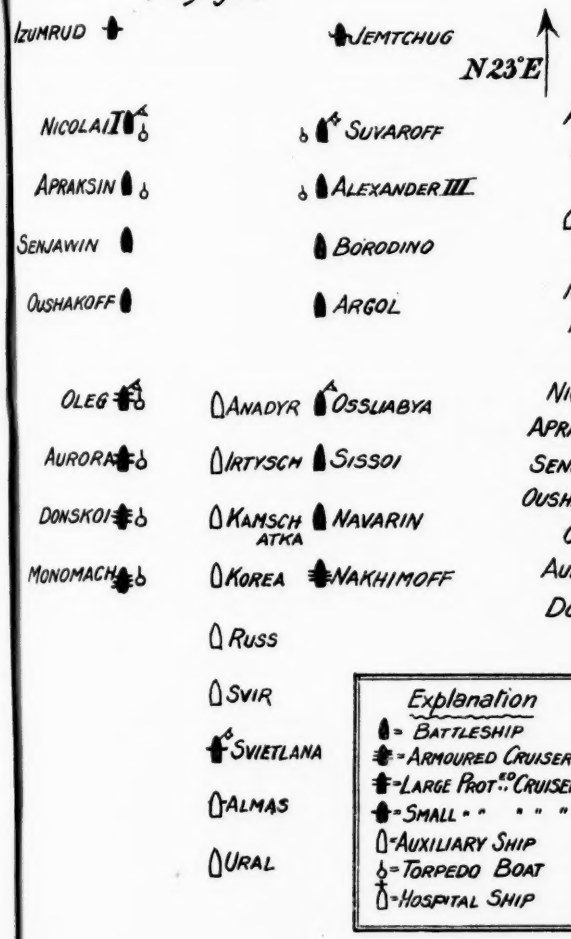
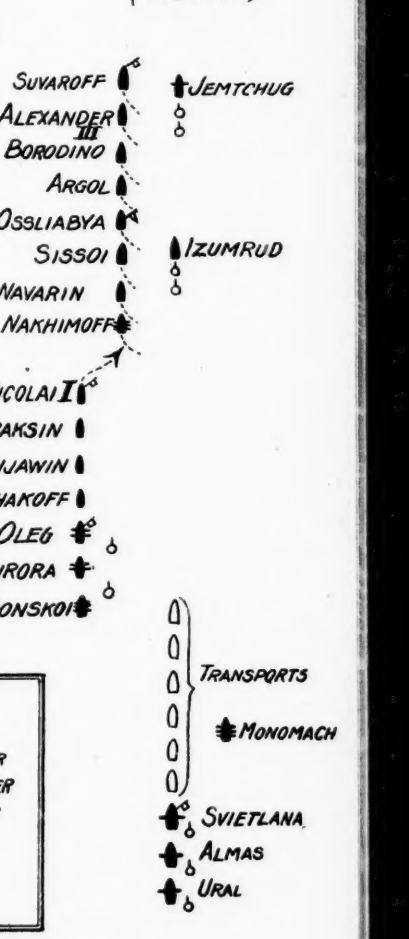


DIAGRAM II.

(11.30 A.M.)



KOSTROMA OREL

At daybreak the Russian Admiral put his scouting division astern, with the exception of "Shemtschug" and "Izumrud," which were looking out ahead (see Diagram 1). At 6.30 a.m. the fleet had "Ukushima" abeam, and was 40 miles south of Tsushima, when the "Izumi" hove in sight, about 3 miles off, rather abaft the starboard beam. At 9.40 four enemy's ships (Dewa's Division) hove in sight on the port hand, steering a northerly course and closed slowly.

The Russian Admiral beat to quarters and gave the "Monomach" orders to protect the transports. At 10 a.m. he began to form the fighting line, the 1st and 2nd Divisions increased speed to 11 knots, to take station ahead of the 3rd and Cruiser Divisions. At 10.25 the fleet went to dinner. No notice was taken of the enemy's cruisers. At 11 a.m., ten more hostile cruisers hove in sight to port, probably Takaoka's Division. The "Argol" opened fire without orders, some other ships did so as well; the Japanese replied slowly. At 11.25 the firing ceased, and the enemy hauled off. At 11.30 the 3rd Division sheered into the wake of the 2nd, so that the line was formed as in Diagram 2.

At 12.25 the fleet were steering north, 23° east, and were 22 miles from Kosaki Lighthouse. Towards 1 p.m. the 1st Division turned to starboard and increased to 11 knots. At 1.45 p.m. the main body of the enemy hove in sight to the north-east, in single line, steering a westerly course, and on the port hand several cruisers, which were endeavouring to join the main body. Admiral Rodjestvenski resumed his old course with the 1st Division, and the formation was consequently as shown in Diagram 3. The 1st Division turned again to port to close the port column, and to allow the 2nd Division to sheer into its wake.

Admiral Togo had left Masampho on receipt of the "Shinano Maru's" signal, and had steamed in an easterly direction to the northward of Tsushima; he had with him, besides the 1st and 2nd Divisions, the 4th (Uriu's) Division and the destroyer flotillas. The small torpedo-boats had been sent to Miura Bay (Tsushima) on account of the heavy sea. Togo had been kept constantly informed of the movements of the enemy, and had made the following assumptions:—"The enemy's fleet consist of all the ships and vessels of the 2nd and 3rd Baltic Squadrons, is accompanied by seven special service ships, and is formed in two columns, with the strongest ships in the van of the starboard column, astern of that column are the special ships, the speed is 12 knots, and the course north-east." Upon that, he decided to meet the enemy, with his main body, at 2 p.m. off Okinoshima, and to make the attack on the head of the port column. At noon he was 10 miles north of the island, and steering a westerly course, so as to reach the left flank of his opponent.

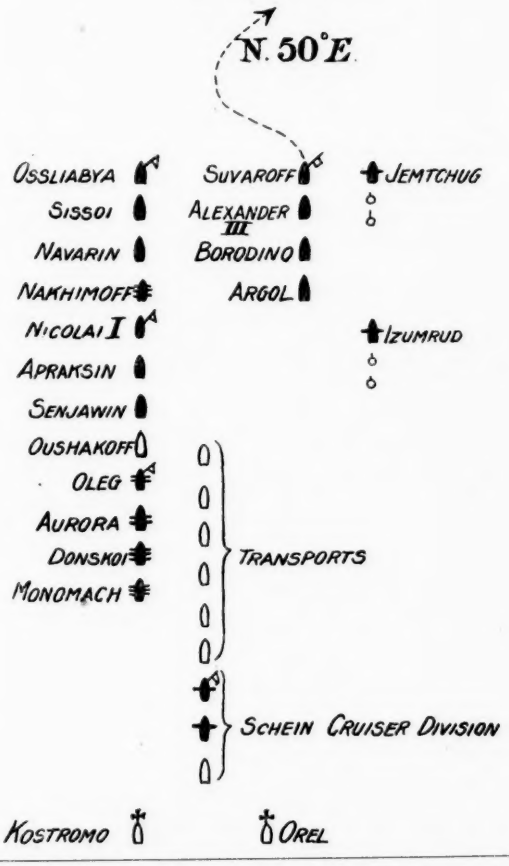
About 1.30 p.m., the 3rd (Dewa's) Division, which had been keeping touch ahead of the enemy, joined the main body, followed shortly afterwards by the 5th and 6th Divisions, under Kataoka and Togo the younger. At 1.45 p.m., Togo sighted the enemy on his port hand, to the southward, in the expected formation, and gave the order for battle, making, at the same time, the following signal:—"The rise or fall of the Empire depends upon to-day's battle, let every man do his utmost."

The 1st Division steered, first of all, a south-westerly course for a long while, to make the enemy think that a merely passing action

was to be fought. At 2.5 p.m., however, they turned to east and pressed upon the enemy's van; the 2nd Division followed this movement, whilst the Divisions of Dewa, Uriu, Togo, and Kataoka steered south in accordance with a previously arranged plan,[1] and took up a position in the enemy's rear.

DIAGRAM III.

1.45 P.M.



[1] So far as this plan is known it provided for seven stages of the action: the first two were not carried into execution on account of the weather, the action, therefore, began with the third stage, and ended before the sixth was reached. The third stage comprised the employment of all available force during the daylight engagement; the fourth, the night attack of the flotillas; the fifth, taking up station east and west of Ullondo, to capture escaping ships; the seventh did not have to be considered.

First Phase of the Battle.

Diagram 4 shows the relative positions of the two fleets at the beginning of the action, and the subsequent development of events up to 5 p.m. From the diagram it would appear that the Russian Admiral was taken aback by Togo's manœuvre, and that his two headmost ships were exposed for a considerable time to the enemy's fire before the line was properly formed, and whilst they were in such a position as to prevent them making an effective reply. The Russians opened fire at 2.8 p.m., at about 8,500 yards; the Japanese waited until the range was about 6,500; nevertheless, the latter fired more quickly, and increased by rapidity of fire the preponderance of their gun-effect.

The Russian line trended away towards north, 50° east.

A Japanese officer reckoned that they made about 40 per cent. of hits, whilst the Russians could only show at the most 10 per cent. When one takes into consideration that, after the turn in succession, the Japanese were able to open fire from all the guns on one side, and that the Russians, on the other hand, could only, for the most part, fire their bow-chasers, and that even the firing of those was hampered by manœuvring into line, it is obvious that the Japanese had an enormous advantage.

The first ship to succumb was the "Osliabya"; she began to sheer out of the line at about 2.25. At the very beginning, a 12-inch shell had struck her forward, and, in consequence of the sea that was running, her two foremost compartments filled with water. Shortly afterwards another shot knocked a hole in her No. 10 bunker, presumably through the loosening of an armour plate; the ship heeled over to port. At the same time, three more projectiles took effect on the foreturret, the first damaged the lower portion, the third penetrated the turret armour, wounded the commander severely, and put the whole turret's crew out of action. To upright the ship several compartments on the starboard side were flooded, but without effect; she settled deeper and deeper by the head, and heeled more over to port until the water entered the ports of the lower battery and of the bow guns, which could not be shut on account of the damage she had received. The result was, that the ship capsized.

The torpedo-boats "Buiny," "Brawy," and "Bystry," steamed towards her with all despatch, and saved part of the crew. Amongst the floating objects observed were mines which had been stowed below the upper deck, so the deck must have burst.

At the same time as the "Osliabya" sheered out, the 2nd Division sheered over to port and kept out of the line.

The Russian van ships concentrated their fire on the "Mikasa"; the Japanese line steered an almost parallel course to theirs at a distance of about 5,000 yards, concentrating their fire likewise on the headmost ships. About 3 p.m. the "Ssuworoff" sheered out to starboard and lay apparently unmanageable, both masts and both funnels shot away, and the upper deck *rasee'd*; notwithstanding this, the ship continued to keep up her fire. The "Russ," tug, which sank later, stood by her.

Admiral Rodjestvenski was wounded several times, some of the wounds were severe; he and part of his staff went on board the "Buiny," where he remained during the rest of the action; the

signal made from the "Buiny," transferring the chief command to Admiral Nebogatoff, was presumably not repeated, at all events, he only took command at about 6.30 p.m. Up to that time he had neither been informed of the wounding of the Commander-in-Chief, nor was he aware that the second-in-command (Rear-Admiral Folkersahm) had died two days previously.

Shortly after the "Ssuworoff," the "Alexander III." sheered out to port with a heavy list and badly on fire; the "Borodino" became the leading ship. These occurrences naturally threw the Russian line into disorder, and hastened its outflanking by the Japanese. The ships were forced away more and more to the southward, under the pressure of the Japanese fire, and gradually became separated, the three coast-defence ships dropped astern. Fire broke out on board several ships, notably the "Sissoi-Veliki," the "Navarin," and a coast-defence ship. The Japanese ships had received some damage as well; the "Asama" was hit by three shells aft, near the water-line, and was obliged to sheer out of the line as the rudder was disabled, and the ship was leaking badly. After repairing damages she took up her station again. However, by 2.45 p.m., according to Togo's report, the battle was virtually decided.

Smoke lay heavily on the water and contributed, together with the fog, to, at times, completely enshroud the Russian ships, so that the Japanese were obliged to cease firing. But as soon as ever the enemy became visible they opened fire again. About 3 p.m., when the Japanese fleet were to the northward of the Russians, steering south-east, Togo noticed that the enemy had altered its course to the north; he attributed this move to an intention to break away to the northward, passing under the stern of his line, and he met this by turning the 1st Division 16 points to port together, and the 2nd Division 16 points in succession to port, following in the wake of the 1st Division; this enabled the 2nd Division to cover the 1st during its movement, and put the "Nishin" at the head of the column.

How the Russian manœuvre was carried out was not quite clear; Togo speaks of a sudden turn to the north, the Russian description, on the other hand, speaks of an encircling movement round the damaged flag-ship. At any rate, it may be taken for granted that the leaderless line, yielding to the pressure on its van, gradually got jumbled together towards the south, and then, possessed by the idea of getting through to Vladivostok, gradually succeeded in disentangling itself from the crowd and trying to break away to the northward.

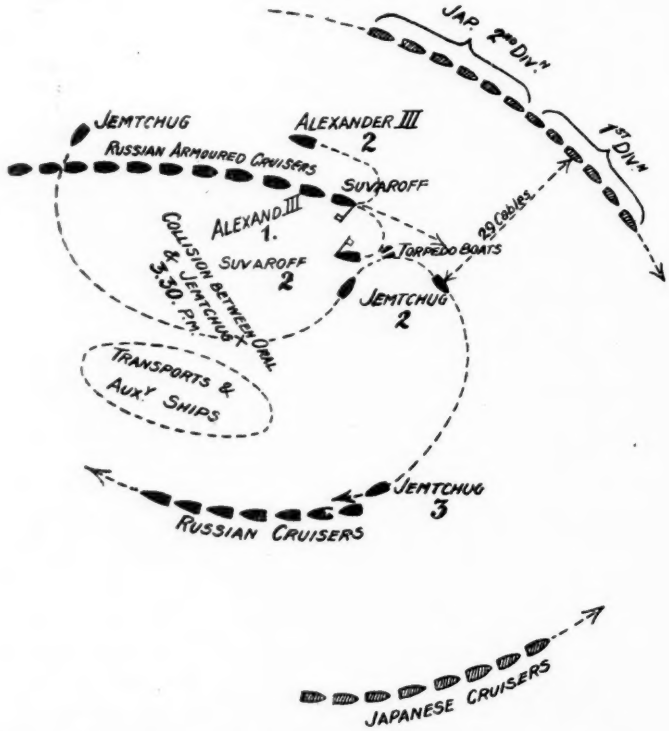
Second Phase of the Battle.

Somewhere about 3.30 p.m. the encircling movement was completed, and the Russian line, hindered by Togo's manœuvre from getting a clear passage to the north, stood away again to the eastward. The Japanese line followed their movements as before by turning the 1st Division on their heel and swinging the 2nd Division in succession, so that the "Mikasa" once more became the leading ship, and the situation reassumed the character of the "first phase of the battle." A running fight ensued, on an easterly course, until about 4.40 p.m., during which the Russians were gradually overhauled and pressed towards the southward. "Alexander III.," after

fothering her leaks and getting the mastery over her fires, sheered into line again, either between the "Borodino" and "Argol," or astern of "Argol."

As a supplement to a description of the battle, a diagram, drawn by an officer of the "Shemtschug," will be of interest (Diagram 5). This cruiser had hurried to the "Osliabya" to save her people, but she had been driven off by heavy fire, and had gone towards the "Ssuworoff." On the way she passed near the transports, which were all huddled up in a heap and collided with the "Ural," which ship

DIAGRAM V.



just failed to clear her stern, and damaged her stern torpedo tube, breaking off the war-head that was in it without exploding it, injured her starboard side, and damaged her starboard screw, owing to which she herself sprang a leak. When near the "Ssuworoff," the "Shemtschug" again came under heavy fire, her foremost funnel was shot away, and the ammunition lying on deck was ignited, so she turned off to starboard and joined Enquist's cruiser division.

Several torpedo attacks were made on the "Ssuworoff" as she lay unmanageable, one by the "Chihaya" and "Hirose" flotillas, at 3.40, and another by the "Suzuki" at 4.45, the first two were

unsuccessful, the third got in a hit under her stern, which gave her a list of 10°. The "Shirami" and "Asashio" (destroyers) were damaged.

Towards 4.40 p.m. the Russian line was steaming in a southerly direction. Togo appears to have discovered this manœuvre rather late, for he speaks of the pursuit of the enemy beginning now, during which the armoured cruisers were put at the head of the line, until the enemy was lost sight of, owing to smoke and thick weather; presumably, the Japanese ships had turned south, by divisions, leaders first. The 1st Division fell in with the Russian cruisers, and special ships to starboard, and directed a cool and deliberate fire on them.

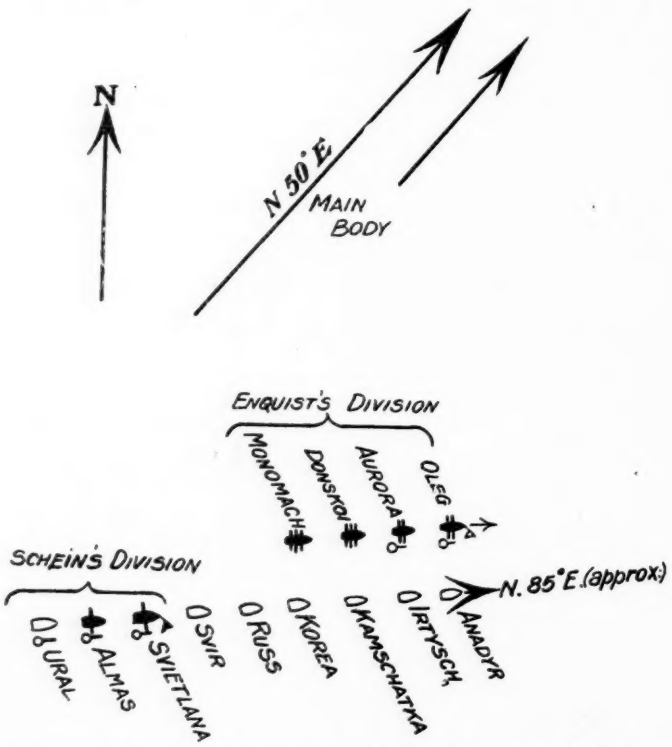
Cruiser Actions.

To be in a position to understand the third phase of the battle, it is necessary to refer back to the engagements which had been going on between the cruisers. At the beginning of the battle the divisions of Dewa, Uriu, Kataoka, and the younger Togo had parted from the main body, and had proceeded in a southerly direction, leaving the enemy on the port hand, with the intention of threatening the enemy's rearguard, in accordance with a pre-arranged plan. The rearguard consisted of the divisions of Enquist and Schein, as well as the transports, and they were in the order shown in Diagram 6, steering a course of about 4 points to the eastward of that steered by the Russian main body. The fast divisions of Dewa and Uriu (20 and 18 knots respectively) came up with the opposing cruisers first, and gradually drew across their stern and up on their starboard quarter, and opened fire at 2.45 p.m. Owing to their superior speed they were enabled to choose the distance and to keep themselves, as necessity arose, outside the range of a superior fire. The slower 3rd Squadron appear to have come into action later. The Russian transports were, at the beginning of the action, about 4 miles distant from the main body, the light cruisers were covering their rear, and consequently, came under fire first. Enquist's division, which had been joined by the "Monomach," was on the port side of the transports. About 2 p.m. Admiral Enquist made the signal to his division:—"Single line ahead," upon which the "Oleg" and "Aurora" went on full speed, and the "Donskoi" and "Monomach" dropped back. The "Oleg" turned 16 points to port and made towards the enemy, but she was received with such a heavy fire that she backed again to starboard. Schein's division and the transports came under a heavy crossfire, and were thrown into disorder; the "Ural" sprang a leak and sheered out of line, and began to lower her boats; Schein sent "Korea" to her assistance, which ship took her people on board. "Svietlana" began to settle by the head, the result of a hit in the bows. "Almas" consequently joined up with Enquist's division, and took part, as far as her 4·3-inch guns would permit, in the fight. Amongst the transports, "Kamtschatka" and "Irtysch" suffered particularly, fire broke out on board both of them, and the latter sank about 4 p.m. About 3.30 the cruisers circled round the transports and came on to the opposite course to the opposing cruisers, the "Schemtschug" joined them. Shortly after 4 p.m. the Russian destroyers attempted to make an attack, but were driven back by the enemy's cruisers before they could get within torpedo range.

At 4.10 p.m. Admiral Enquist discovered the helpless condition of "Ssuworoff," which was being attacked by torpedo-boats, whilst the ships of her own line were getting farther and farther away from her to the north-east, he hastened to her assistance with "Oleg" and "Aurora." About 4.30 he noticed that the main body itself was gradually turning towards the south, and, as at the same time, he saw that the transports were in great distress, he turned off, and, calling

DIAGRAM VI.

1.45 P.M.



the "Donskoi" and "Monomach" to him by signal, proceeded once more against the opposing cruisers, the "Shemtschug" joined him.

At this period the "Oleg" and "Aurora" suffered severely, as the small detachment found themselves opposed to about 13 of the enemy's cruisers. At 4.40, four ships (the three coast-defence ships, and probably the "Nakhimoff"), which were in flight before the Japanese main body fell in with the cruisers, and put the Japanese cruisers in a very perilous situation. All the ships had suffered, more or less, but the damage was mostly slight. The "Kasagi" sustained a very severe injury in a port bunker, below the waterline, she made so much water that Vice-Admiral Dewa gave the command of the

rest of his division over to Uriu, and ran the "Kasagi," in the company of the "Chitose," under the Japanese coast. Here he left the "Kasagi" behind, and made all despatch in the "Chitose" to join the main body before dark. The "Naniwa" also was hit below the water-line aft, and had to quit the line. About 5 p.m. the rest of the Russian main body, keeping on a southerly course, got in amongst the cruisers and transports again, which were wandering about in a disorderly medley, and all getting in each other's way. It was into this general scrimmage that the Japanese cruiser divisions, the armoured cruisers, and at times even the battle-ships, fired at random from three sides at once.

Third Phase of the Battle. (Diagram 7.)

The Russian line disengaged itself from this crowd again in the following order: — "Borodino," "Argol," "Nikolai I.," "Sissoi-Veliki," "Navarin," and "Alexander III.," which had rejoined with a heavy list; astern of them, at a considerable distance, followed the three coast-defence ships, and "Nakhimoff," on whose port hand was Enquist's Division, with "Svietlana," "Almas," and almost all the destroyers. The signal was made down the line:—"The Commander-in-Chief has transferred the command to Admiral Nebogatoff. Course N. 23° E."

At 5.30 p.m. the Japanese 1st Division, after running about 8 miles to the south, turned again to a northerly course to seek the enemy's main body, whilst the 2nd Division attacked the enemy's cruisers from the south, and thus gave their own cruisers breathing time. Later on they followed the Russians, who were now all flying to the northward. At 5.40 the 1st Division sighted the "Ural" drifting about, deserted, and sank her. Shortly after they sighted the Russian line steering north, and overhauled them.

In the ensuing running fight the Japanese appear first to have concentrated their fire, as they were coming up, upon the rear ship, "Alexander III.," which ship, in consequence, sheered out and dropped astern, then upon the van-ship "Borodino." About 6.40 p.m. a violent conflagration broke out on board that ship; at 7.23 an explosion occurred, which caused her to founder. The action lasted from 6 p.m. to 7.28 p.m.; the Russian fire gradually slackened, whilst their line trended away to the westward, under pressure from the outflanking enemy.

The 2nd Japanese Division, during the pursuit, saw the "Alexander III." capsize and go down at 7.7 p.m., as she was being approached by the "Nakhimoff," which had a heavy list, The 2nd Division rejoined the 1st at 7.28 p.m.

The Divisions of Kataoka and Togo the younger, fell in with the "Ssuworoff" and the repair-ship "Kamtschatka," at 7.10 p.m., both driving with the wind, and destroyed the latter. The former was attacked by the flotilla under Fusimoto, was hit twice and sank at 7.20 p.m., only, at the last, firing from one light gun in the afterpart of the ship.

Shortly before sunset Togo had sent the despatch vessel "Tatsuta" to convey the order to all squadrons to assemble next morning off Ullondo. Then he turned off to the eastward, away from the enemy, to make room for the flotillas which were coming in from all directions.

Thus ended the daylight action.

4. The Night Attacks.

The night attack was begun energetically by all the Japanese flotillas directly after the daylight action was over. As the wind flawed towards evening, although there was still a rough sea, all the flotillas of small torpedo-boats came out of Miura Bay without orders, so as not to lose the opportunity of being in the attack. After sundown the flotillas closed in from all sides (see Diagram 7).

The first attack ensued at 8.15 p.m. from almost all flotillas at the same time; the attacks were repeated at short intervals until 11 o'clock at night. They succeeded each other so quickly that the ships had hardly any time to ward them off. In fact, the boats went so close, in spite of guns and searchlights, that they frequently got within the "dead angle"[1] of the guns. Apparently the Russian ships illuminated themselves so much with their searchlights that they showed the way clearly to the attackers. The flotillas, which did not take part in the attack, were those which were seeking for the scattered remnant of the enemy's ships.

The Russian line, at the head of which the "Nikolai I." had taken up her station after the "Borodino" had gone down, came back to the old course as soon as the Japanese line had turned away, but had to alter back again 8 points to port to avoid the attack of the flotillas. The cruisers tried to get out of the way by altering course to port, but got in amongst the transports and threw them into disorder. The main body turned back again shortly after and resumed the course N. 30° E. Nebogatoff made the signal:—"Full speed to Vladivostok"; "Senjawin" and "Apraxin" had rejoined the line; "Sissoi-Veliki," "Navarin," and "Nakhimoff" had dropped some distance astern, and, farther astern still, was the "Uschakoff." Consequently, the line consisted of only four ships all told, "Nikolai I.," "Argol," "Apraxin," and "Senjawin," to which "Izumrud" attached herself; and, in Nebogatoff's opinion, it was thanks to the order to extinguish all lights and not to use their searchlights, that they were exempt from attack, notwithstanding that torpedo-boats swarmed round them up till about midnight.

Admiral Enquist steamed at high speed to the south, but only the "Aurora" could follow him. "Shemtschug" lost him at first, but found him again later. The squadron had frequently to avoid attacks by torpedo-boats coming up from the southward, and they counted more than 17 torpedo shots that just missed them. After he had got past the enemy's boats, Enquist tried again to break through to the north, leaving his assailants to the westward, but he ran in again amongst the hostile boats, and saw the lights of ships ahead of him, so he altered his course back to south-southwest. Soon after 9 p.m. he determined to repeat the attempt, turning this time to the westward, but about 10 p.m. he fell in with more torpedo-boats, and had to turn back. He tried yet once again, turning to the westward, but this time too he came across a Japanese detachment, so finally at 10 a.m. he gave up the idea and steered with his three ships towards the southern entrance of the Korean Straits.

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[1] This is the literal translation of the German; it seems, by the context, to mean within the angle of extreme depression, but I do not know the German for it, nor the English.—Translator.

"Donskoi" and "Monomach" were not in a condition to follow Enquist's Squadron, and steamed, according to the order, in the direction of Vladivostok; the latter being a 15-knot ship overhauled the former, which was only a 13-knot ship; both were hit by torpedoes.

"Svietlana" also could not follow as she was settling by the head; so she steamed at 15 knots to the north. "Almas" likewise had become detached from the Cruiser Squadron, so she acted on her own account and was not attacked.

"Sissoi," "Navarin," and "Nakhimoff" were all together at dusk; the first soon dropped astern, as she was very deep by the head, the result of a torpedo hit; the other two were discovered about 2.0 a.m. by the flotilla under Suzuki, about 27 miles east-north-east of Karasaki, and were attacked; the former sank after being hit by two torpedoes, the latter was severely damaged.

"Uschakoff" could not keep up with them on account of injuries which she had sustained in the forepart of the ship, so she was exempt from torpedo attacks.

The three remaining auxiliary ships "Korea," "Anadyr," and "Swir" at first followed Enquist's Division on a southerly course, but could only go 11·5 knots; they frequently had searchlights thrown upon them, but, by steering a zigzag course, managed to escape ultimately about midnight. Thus the remains of the Russian fleet melted away from the effects of torpedo-boat attacks.

The Japanese losses, in the "Fukuda," "Aoyama," and "Kamada" flotillas, were comparatively heavy; "No. 69" (leading boat of the "Aoyama" flotilla), and "No. 35" ("Kamada" flotilla) sank; their crews were saved by their consorts, "Nos. 31 and 61." The destroyers "Harusami," "Akatsuki," "Ikazuchi," and "Yugiri," as well as the boats "No. 68" and "No. 31," sustained injuries through the enemy's fire, and collision, and were put out of action.

5. The Events of the 28th May.

The Surrender of Nebogatoff.

On the 28th May the weather was bright and clear. The Japanese main body was 20 miles south of Ullondo at daybreak; the Cruiser Divisions and flotillas were rejoining from different directions. At 5.20 a.m., as Togo was on the point of forming a scouting line, the 3rd Squadron, which was 60 miles away to the southward, reported that several columns of smoke were visible to the eastward, and, shortly afterwards, that four battle-ships and two cruisers were in sight steering to the north-west, upon which Togo moved with his main body to get ahead of the enemy, whilst the Divisions under Uriu and Togo the younger surrounded them by the rear. By 10.30 a.m. Nebogatoff was completely surrounded, 18 miles south of Takeshima. He had with him "Nikolai I.," "Argol," "Apraxin," "Senjawin," and "Izumrud"; the other cruiser, probably the "Svietlana," was a long way to the southward, and eventually went out of sight.

According to Togo's statement, the ships were very severely damaged, and could do nothing against him, so shortly after fire was opened, Nebogatoff hauled down his colours. Togo accepted the surrender and permitted the officers to retain their swords.

Nebogatoff, himself, based his decision on the grounds that fire was opened at such a long range that it was impossible for him to reply to it, and that his inferior speed prevented him from getting any nearer to the enemy; he considered that further resistance would only entail the useless sacrifice of 2,000 men, and so, after consulting with his immediate subordinates, who agreed with him, and perusing the instructions on the subject,[1] he decided to surrender. As to the reasons which prevented him from sinking or blowing up his ships, he says:—"1. Neither the shore or other ships were within reach. 2. The pulling boats were, for the most part, shot to pieces, and those that remained intact could not be got out or lowered under fire. As regards the boats, we had no life-saving gear at our disposal, as the cork lifebelts had all been used to make covering and protection for the most exposed positions in the ship. 3. There was no time to take any steps, as the ships were even then beginning to settle down under the effect of the enemy's fire." To his mind, it admitted of, no doubt, that to sink or blow up the ships would be to devote all the officers and men to certain death. Was he not right according to Law and Conscience?

Afterwards he and the captains of the "Nikolai I.," "Senjawin," and "Apraxin," were, by Imperial Edict, degraded from their rank and subsequently dismissed the service by sentence of Court-Martial. The captain of the "Argol" was severely wounded, and died soon after the action; sentence on his successor was deferred.

"*Izumrud.*"

This ship got away at first to the south-east, but as she fell in with some of the enemy's cruisers, she turned to the east. "Chitose," which was just coming back from Aburatani Bay, having sunk a Russian destroyer on the way, took up the pursuit, but could not overhaul the 20-knot chase. "Izumrud" reduced speed to 15 knots about 2 p.m., after she had run out of sight, again at 6 p.m. to 13 knots, on account of leaky condensers and damage to her steering engine. The captain decided to run for Vladimir Bay, there to await orders. About midnight he arrived off the port with only 10 tons of coal, and he had to go in. The ship ran with a flood tide on top of the reef off Cape Orjechoff. As all attempts to get her off failed the captain decided to blow her up, for fear that she should fall into the hands of the enemy, which he did after rendering the guns unserviceable.

"*Uschakoff.*"

The main body of the Japanese fleet were still in the neighbourhood of the place of surrender at 3 o'clock in the afternoon, when

[1] Article 354 of the Regulations for the Navy, 1899, reads as follows:—"During the action the Commander should set an example of courage, and he should continue the fight to the utmost. To avoid purposeless shedding of blood, it is permitted to him to capitulate, if all his officers agree, yet only on condition that all his ammunition is expended, and that his guns are of no further service, and generally, that all means of defence have been exhausted, and that there is no possibility of destroying the ship and saving the crew in boats or on shore."

the "Uschakoff" hove in sight to the southward. This ship had sprung a leak forward during the daylight action of the day before, about 5 p.m., and shortly after she received two more hits forward, which had reduced her speed, so that she could not keep station. In the morning the captain himself observed heavy clouds of smoke all round the horizon, and called his officers in council, the result of which was a unanimous decision to fight to the last. At 3.30 p.m. the armoured cruisers "Iwate" and "Yakumo" approached, flying the signal:—"We advise you to surrender, Admiral Nebogatoff has given himself up"; in answer to which the "Uschakoff" opened fire. After about an hour's fight, she received a very heavy shot aft and began to sink. The captain ordered the engineer officer to open the sea cocks, and the crew to save themselves. 12 officers and 320 men were saved; 80 were drowned, amongst whom was the Second-in-Command.

"Sissoi-Veliki."

This ship was hit shortly after the foundering of the "Osliabya," first in sick quarters, below the waterline, and then in the port torpedo room. In all she had 12 leaks, and was heeled to starboard. She had 28 killed and 29 wounded. About 4 p.m. fire broke out in the battery casemate, which was only extinguished after two hours' work; the ship then took station in line again, in the meantime she had only been able to fire her 12-inch guns. After dark the "Sissoi-Veliki," which, up to that time, had been able to keep station, dropped astern and received a hit from a torpedo aft in the electrical engine room, which damaged her rudder and knocked two screw blades off. With a view to trimming the ship the leak was not stopped. All night long the men worked to get the water off the mess-deck, but without success. In the morning the construction of rafts was begun, when the "Monomach," with a heavy list to port, and the destroyer "Iromki," were seen approaching. The "Monomach" would not take the crew on board as she was expecting to go down herself every minute. The destroyer could only take a few, so the captain of the "Sissoi-Veliki" refused her help. An hour later three Japanese transports came on the scene and saved 570 men. At 10.30 the ship sank, canting over to starboard.

"Navarin."

This ship only received slight damage during the daylight action, her belt was not pierced. Towards evening a shot struck her mast at the very moment that a box of ammunition was being hoisted. An explosion followed, which wounded the captain, Baron Wietinghoff, severely, also the first gunnery officer, and a midshipman; furthermore, 20 men on the mess-deck were slightly wounded, and 1 stoker was killed. The searchlight was destroyed. During the night attacks the loss of the searchlight was very much felt; at first, the "Nakhimoff" lighted up the boats for her, but latterly the "Navarin" dropped astern, because the bursting of a steam pipe had put three boilers out of action, consequently, she was attacked several times with success. First a torpedo hit her in the starboard 6-inch magazine, and filled the compartment. As she settled water came in through the shot holes aft, which the crew then, for the first time, began to deal with. The work was made the more difficult owing to

the heavy sea that was running, which washed about 40 men overboard from the stern. About 2 p.m. the flotilla, under Suzuki, attacked her, and with two hits reduced her to a sinking condition. The crew remained at their stations until the pipe: "All hands on deck." The attempt to get the undamaged boats in the water failed. The captain, who was very severely wounded, allowed himself to be carried into the Charthouse; of the whole crew only three men were saved, two of whom were picked up by a British steamer the following afternoon.

"Dmitri Donskoi" and "Bjadowy."

As before mentioned, this armoured cruiser managed to escape from the night attacks. Towards midnight three Russian destroyers, "Buiny," "Gresny," and "Bjadowy," closed her and asked what course she was steering. At daybreak they came in sight again, and "Donskoi" took from the "Buiny" the rescued men belonging to the "Osliabya," then Japanese boats hove in sight, before whom the Russians took flight in a northerly direction. Two hours later they turned back, "Buiny" flying a signal of distress; Admiral Rodjestvensky was transferred, with his staff, on board "Bjadowy," and the rest were taken on board the "Donskoi."

"Bjadowy" and "Gresny" steamed away to the north, but were sighted and attacked by "Sazanami" and "Kagers" at 3.30, 40 miles south-west of Ullondo. "Bjadowy" hoisted the white flag, as she had not steam enough, so she was captured with the Admiral on board. "Gresny" escaped to Vladivostok.

In the meanwhile, "Donskoi" had lost 2 or 3 hours, but sighted Ullondo at 2 o'clock in the afternoon; at 4 she sighted the division of Uriu, and the destroyer flotilla under Yajima, which closed on her slowly; at 6 the "Niitaka" and "Otowa," and the destroyers "Asagiri," "Fubuki," and "Shirakumo" were observed to the northward. "Donskoi" found herself exposed to a cross fire, which she replied to by opening fire on the leading ship of the enemy; several times fire broke out on board "Donskoi," and she lost in two hours 60 killed and 120 wounded. Then the enemy's ships ran out of sight, and repeated torpedo-boat attacks were unsuccessful. The ship had no leak, but one boiler had been hit, and the ammunition began to run short. The captain had been wounded in the foot. Then the captain decided to land the crew and steamed close to the Island of Ullondo, a cutter was repaired and the disembarkation was begun. As, next morning, enemy's torpedo-boats were sighted, the rest of the crew jumped overboard and swam ashore. The second-in-command took the ship into 100 fathoms of water, and opened the sea-cocks, and she sank in 25 minutes. The survivors were taken on board the "Fubuki" and "Kasuga Maru."

"Nakhimoff" and "Monomach."

The "Sade Maru" and the destroyer "Shiranui," fell in with the "Nakhimoff" in a sinking condition, at 5.30 a.m. on the 28th, east of Kotosaki Tsushima, and with the "Monomach," which was closing her with a heavy list. It was not possible to save either ships, and they went down about 10, after the crews had been rescued.

"Gromki."

About this time the "Gromki" appeared, and was chased by the "Shiranui" and torpedo-boat "No. 63." After her guns had been silenced she was captured at 11.30 in the forenoon close to the Island of Tsushima, but sank an hour later.

"Svietlana."

This cruiser sprang a leak in the bows during the daylight action, which caused the foremost magazines to be flooded, two men to be drowned, and the electric light to go out. As she settled the speed was brought down to 15 knots, later on she received 5 or 6 hits in the outer skin, and five men were wounded. At nightfall she lost Enquist's division, and broke away to the north without being attacked; "Brawy" joined her. At 7 a.m. she was sighted by Uriu's division as they were steaming to the northward, "Niitaka" and "Otowa" were detailed in chase. Schein, the captain of the "Svietlana," held a Council of War; he still had 100 rounds left, 11 of which were for medium guns. In this situation the Regulations permitted him to surrender, nevertheless, he resolved to fight to the last shot, and then to sink the ship. The "Brawy" escaped to Vladivostok. The fight lasted one hour, the number of the dead and wounded rose rapidly, the hull sustained numerous injuries, finally, first the starboard engine and then the port were put out of action. Every round having been fired, the captain decided to open the sea cocks. He remained on the bridge as the crew jumped overboard; the second-in-command was killed as he was trying to rescue the wounded. The ship went down in deep water about 11.35, and the Japanese steamed away to chase the "Donskoi." Only at about 5.30, 10 officers and 100 men (out of 440) were picked up by the "America Maru," of whom 22 were wounded men lashed up in their hammocks.

"Almas."

This ship received several hits during the action; in the evening she found herself cut off from Enquist's division, and ran in amongst the enemy's torpedo-boats and cruisers. However, she managed to break through to the north eventually, by running at 16 knots, first towards the Japanese coast, and then on a northerly course. She reached Vladivostok on the 29th with 160 tons of coal on board.

Enquist's Division.

After Admiral Enquist had given up the attempt to break through to the north, and had succeeded in getting clear away from torpedo-boat attacks, he steered south-west, in the "Oleg," followed by the "Aurora" and "Shemtschug," at about 15 knots, and after 2 a.m. at 12 knots; during the night damages were repaired.

At daybreak, on the 26th, the horizon was clear of ships, so he reduced speed to 10 knots to husband his coal (the ship still had coal for about 1,300 miles at economical consumption).

The casualties for the three ships were as follows:—

	Killed.		Wounded.	
	Officers.	Men.	Officers.	Men.
"Oleg"	—	15	3	39
"Aurora"	1 (The Captain.)	9	6	81
"Shemtschug" ...	3	9	3	19

Admiral Enquist shaped course for Woosung, so as to fill up with coal from a transport, and to make use of the time, as well, to effect necessary repairs; after which he intended to take a collier with him and either to go to Vladivostok through the Laperouse Straits, after the battle was over, or else to go back to Russia. On account of the casualties on board the "Aurora" the Admiral shifted his flag to her. On the 29th, at daybreak, he met the "Swir" tug, whose information determined him to go to Manilla. A fresh south-easterly breeze rendered the passage difficult for the "Oleg"; also, as coal began to get scarce, the squadron had to put in to Sual to the northward of Manilla, on the 2nd June, but as there were no provisions or stores there they went on again on the 3rd to Manilla.

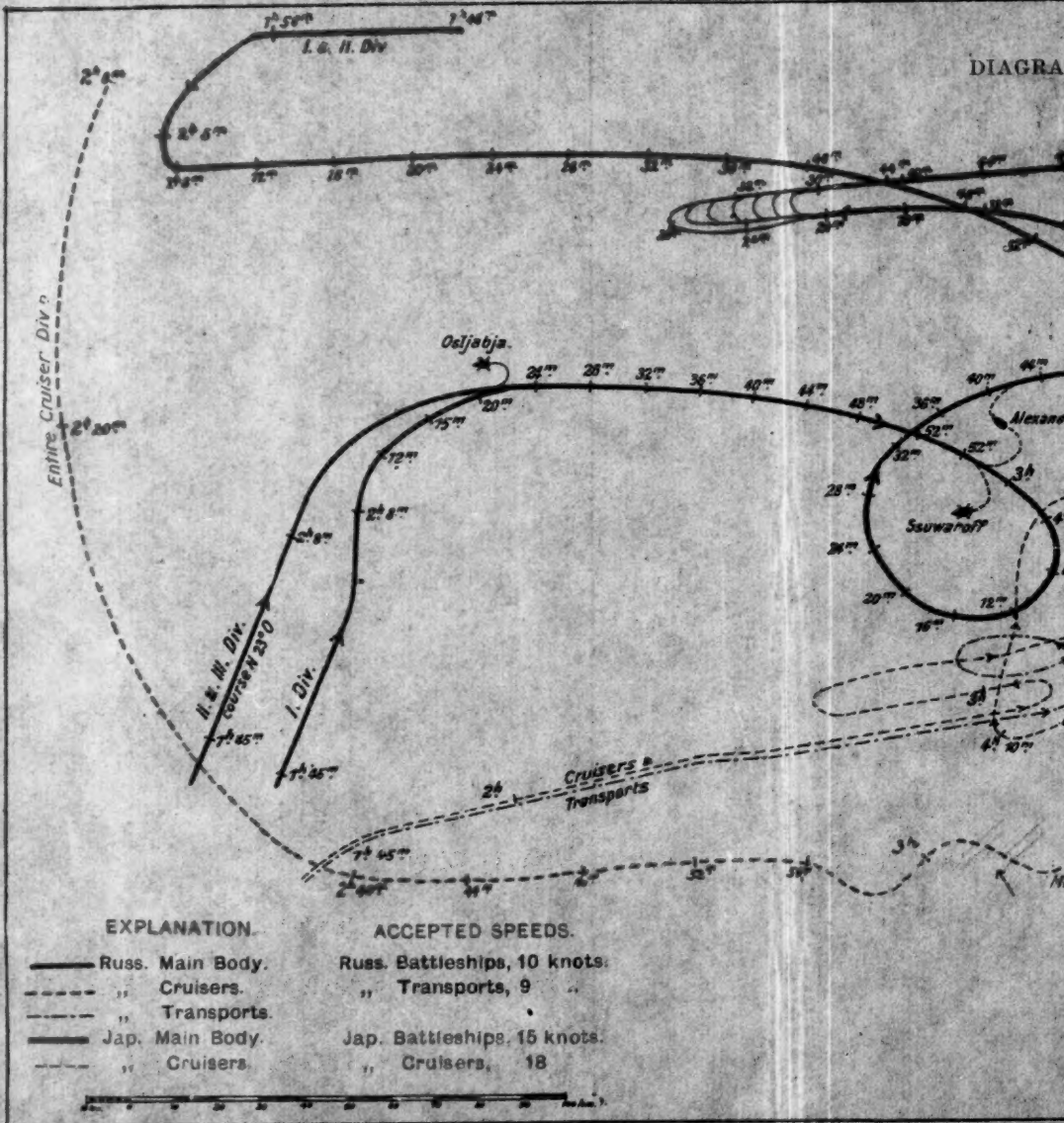
Torpedo-Boats.

Out of the four boats which have not yet been mentioned the "Bodry" and the "Blesstaschtschi" went away to the southward, the latter was sunk, the former reached Woosung; the "Besupretschny" was destroyed by the "Chitose," and the "Bystry," in trying to escape from the "Niitaka" and the "Murakumo," ran aground at 11.30 a.m. on the 28th, to the northward of Chekie, Pigeon Bay.

The Transports "Korea," "Anadyr," and "Swir."

After having escaped from the torpedo-boats, put their lights out, and got through the Korean Straits. On the 30th, the "Korea" and "Swir" reached Woosung. "Anadyr" reached Diego Suarez on the 27th June, with her machinery damaged; she had on board 337 survivors from various ships. The hospital-ships "Kostroma" and "Orel" were taken into Japanese harbours. The former was allowed to go free, but the latter was confiscated on the grounds that she had been used for warlike purposes. The rest of the auxiliary ships were sent to the bottom.

DIAGRA



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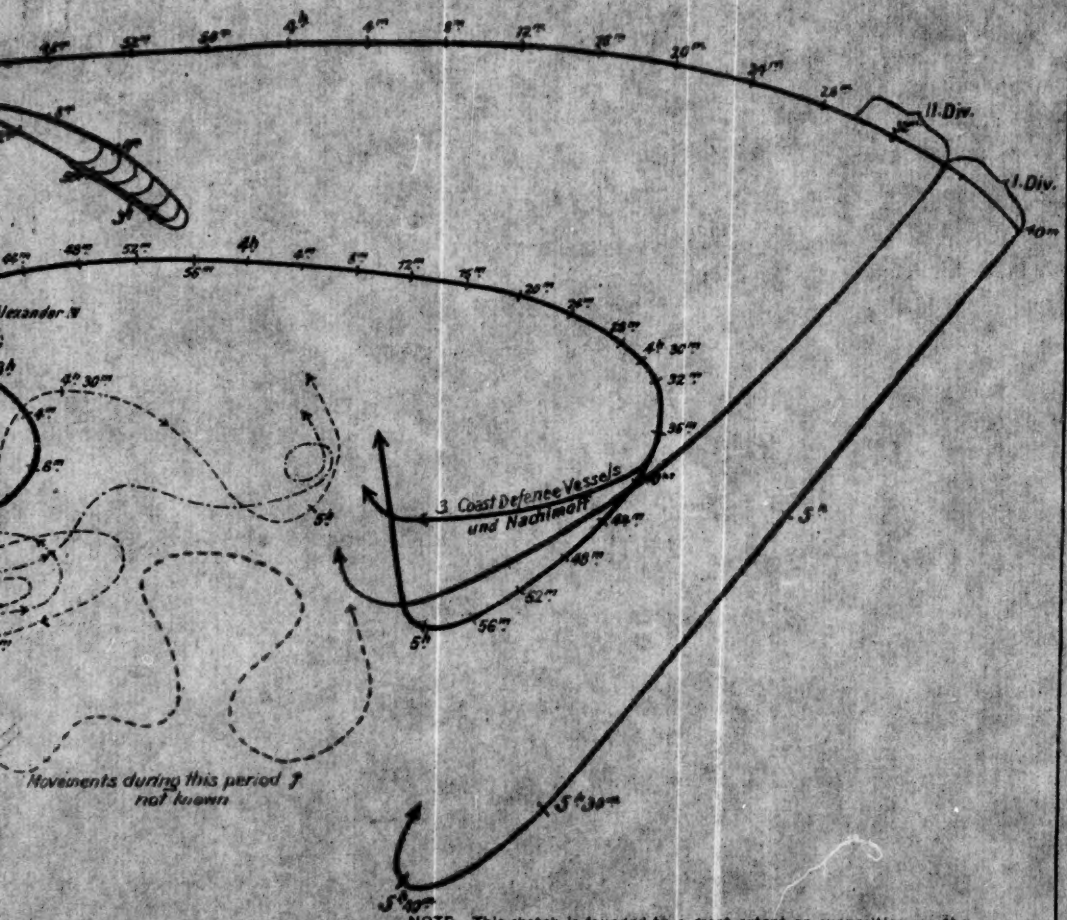

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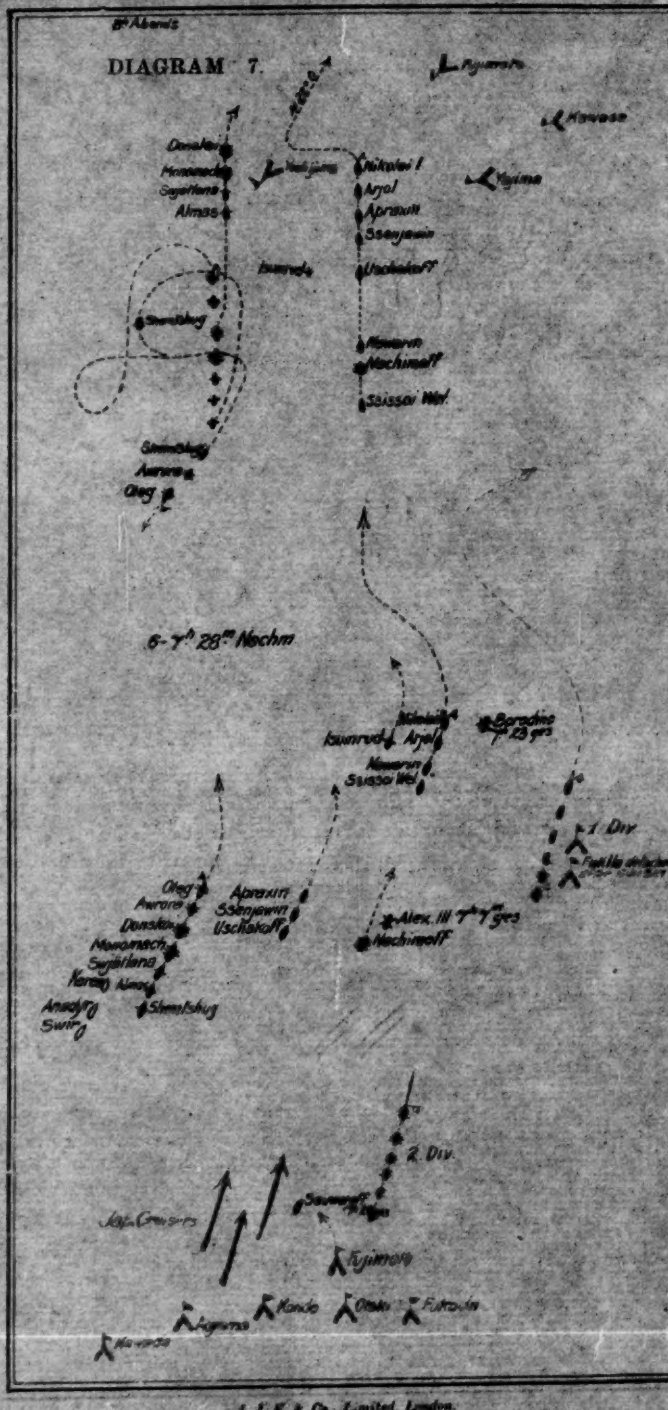

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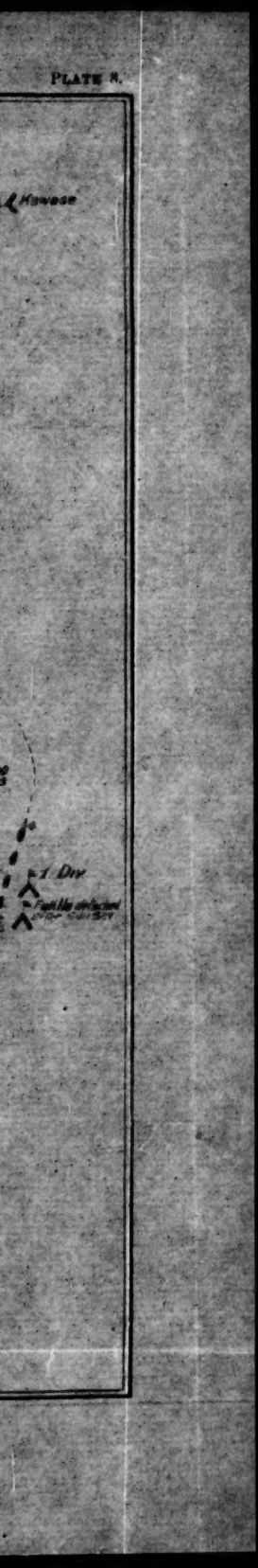
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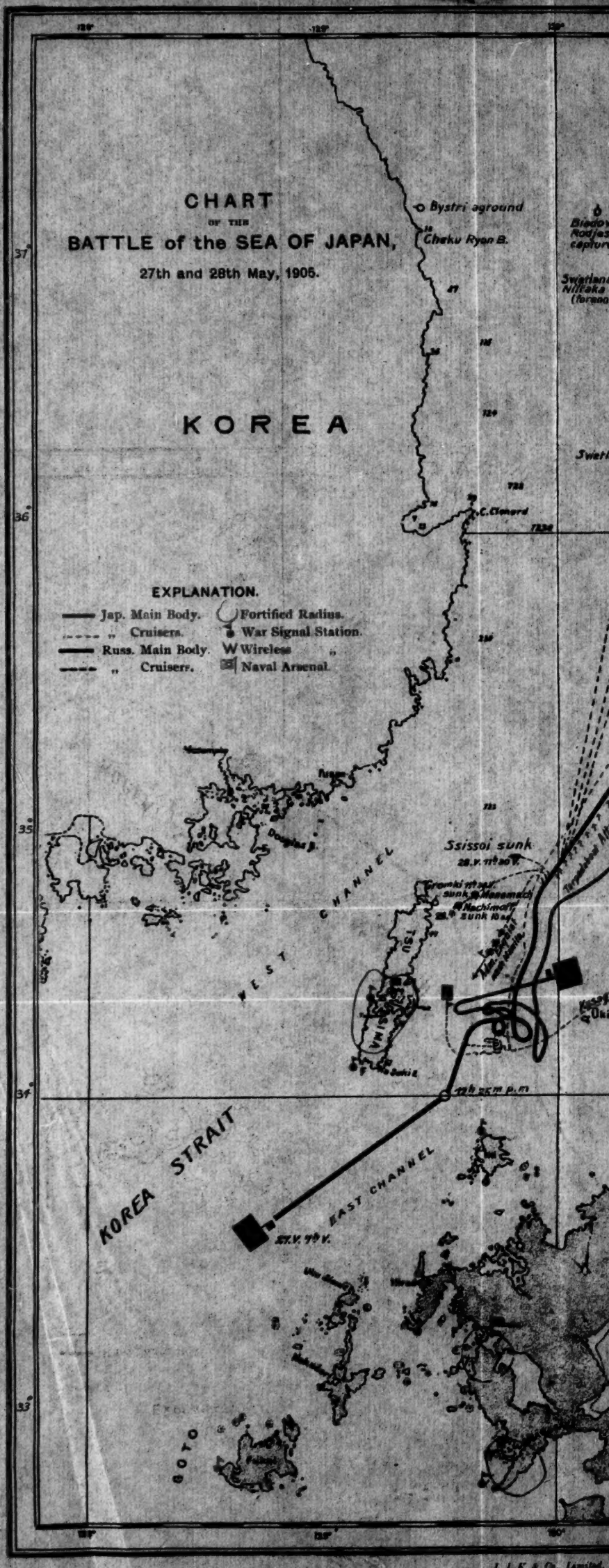

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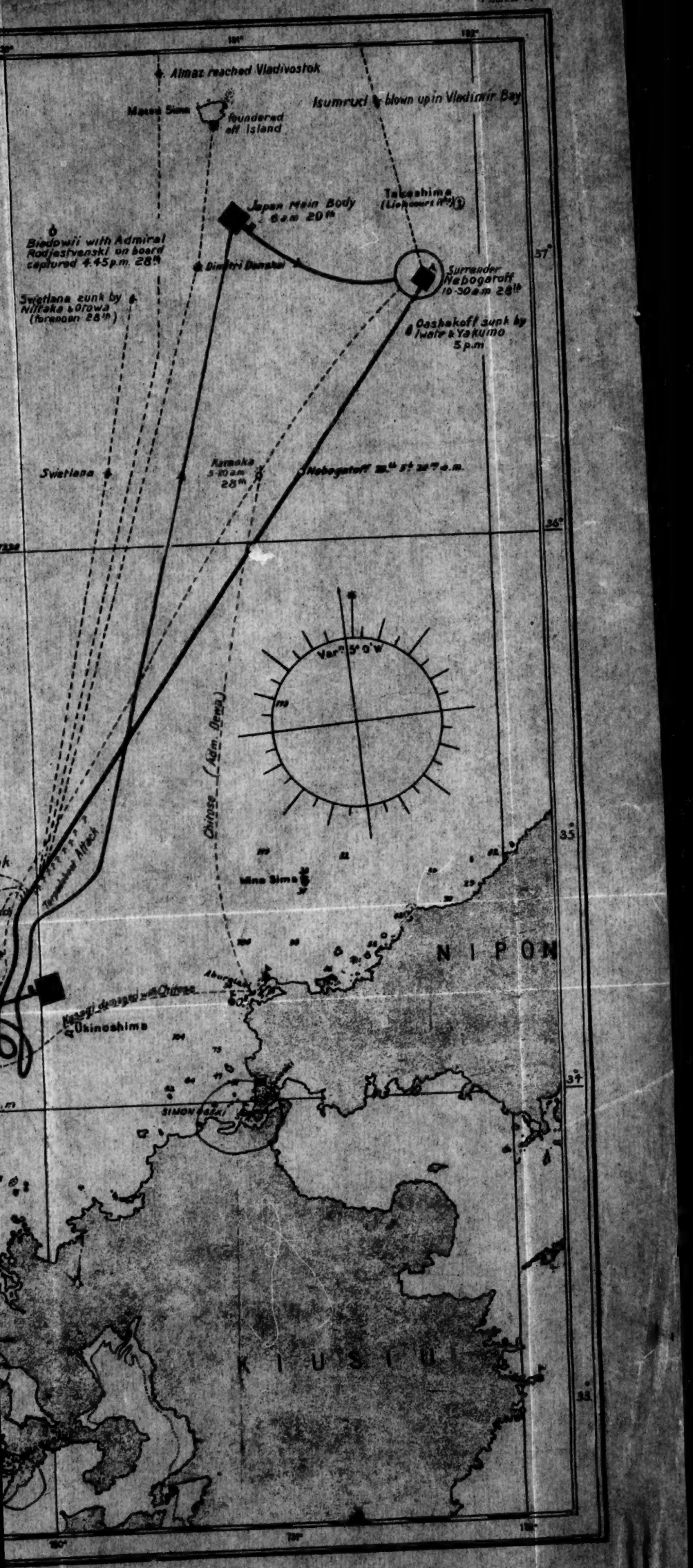

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THE *RAISON D'ÊTRE* OF PERMANENT SUPPLY AND TRANSPORT ESTABLISHMENTS.

By Captain H. C. F. CUMBERLEGE, A.S.C.

Continued from August JOURNAL, p. 1035, *and concluded.*

a. A historical review of their inception and development.

b. Some reflections upon the duties which justify them, their relation to one another, and their provision and training, having particular regard to the wide difference between the needs of peace and war respectively.

In proceeding to consider the duties which justify permanent supply and transport establishments, it is necessary to bear in mind the fact that the foregoing historical survey has left little opportunity or need for further evidence of their importance. What follows is therefore designed chiefly to illustrate the general conclusion already arrived at.

It has been repeated by several eminent authorities that no peace training, however thorough, will fully prepare a commissariat officer for war. That argument, which cannot be denied *en bloc*, has been used to excuse the abolition of the commissariat in time of peace, but such a sweeping application of the half truth is far from justified by the actual circumstances. It is easy to show, by means of reference to some of his duties in war, that a peace training unquestionably aids a commissariat officer to perfect himself by war experience far sooner than he could without it.

The commissariat of an army is the machinery for feeding it in peace as it does in war. That fact alone, however, does not justify the existence of such an organisation in peace, because armies can, in peace, be subsisted as economically without their aid as with it. Economical administration demands that the troops shall, in peace, be subsisted from the cheapest markets. These are found in an elaborate system of contracts, and the supply officer finds himself in peace either without a job at all, or limited to the duties of inspection and account. That is the reason for the opinion enunciated by the committee of 1850 on Army and Ordnance expenditure. What that committee overlooked was the fact that the simple duties of inspection and account give the commissariat officer a considerable insight into military organisation, habits, and needs, while the very fact of continuous service teaches him discipline on the one hand, and on the other instils into him that pride in his profession which induces him, in an emergency, to exert, and, if necessary, to sacrifice himself in the interests of the army of which he is a recognised member. It is impossible to question the fact that a commissariat officer, equipped

with such a training, is a thousandfold better prepared to assume the onerous duties imposed upon him in war.

Now the supply of an army embraces all those acts essential to the procuring of provisions, the storing them in depôts at advantageous points, and the transporting them to the troops in the field. That must be done at all costs; but the most successful supply officer is he who does this, firstly, in such a methodical and reliable manner that the plans of his general are never embarrassed; and secondly, with economy. The untrained man is at a serious disadvantage in respect of the first condition, and helpless as regards the second, which demands a greater application of method, backed by experience, than even the first. The pages of history illustrate this fact from cover to cover, almost without a break.

In all wars great battles are few and far between. For one day's fighting there will be three weeks' marching and rest. But whether the troops fight, march, or rest, they have to be fed. That is the first great axiom for the supply officer.

Next, the troops must be fed adequately. It is not a question of calculating the smallest ration a man can exist on; when man is called upon, as he is in war, to put forth his greatest power of endurance, he must be fed adequately. That word "adequately" means a great deal more to the trained supply officer than may at first sight appear. Sufficient in quantity would be a common interpretation of the word, but that does not in fact explain its meaning fully.

The occasion is not suitable for a discussion upon the dietetic values of even the commonest articles of foodstuffs; it is sufficient to point out that science furnishes us with very exact data with reference to all of them, and that the supply officer should have some knowledge of the subject.

A man is not fed adequately, although he has acquired the feeling of plenty, if the food does not contain those elements which are required in their proper proportions to keep him in health and strength. It can hardly be called extravagant to assume that under certain circumstances a supply officer might make a double issue of meat because it would give him considerable trouble to get bread. But a double ration of meat, while very useful in its own way, cannot supply the human frame with all its needs, it cannot, in fact, give a sufficient proportion of those properties which a ration of bread furnishes. The result is all the more insidious in that it is slow in action. Such a ration issued on an emergency could do no real harm, but the principle, if persisted in wholesale, might have disastrous consequences. To feed adequately then, means to feed with sufficient foodstuffs of the right kind.

But even that is not all. It is certainly easy to estimate what quantity and kind of food is required, but it is quite another thing to get it. The real test of efficiency in a supply officer, therefore, consists in causing the means available to accord with the needs, it is there that the chief trouble lies.

On the whole, the main difficulties of supplying an army in the field are caused by its state of concentration and by its frequent changes of locality. Consider for a moment a city of, say, 100,000 inhabitants, and the easy access of its purveyors to the markets of the world, and its large proportion of persons, whose special business in life it is to provide food, at frequently recurring shops, and local markets, to the members of each household, large or small. How smoothly the whole

machinery works! The surrounding conditions are constant, every unit of the community is familiar with its own needs, and knows how to meet them easily and regularly. And now think of an army of 100,000 men in the field, frequently moving *en masse*, its markets unstable and often inaccessible. A very small portion of the machine is responsible for the fuel which animates the whole, the other parts hinder the supply rather than aid it, unavoidably certainly, but that does not make the work any easier. The task is no light one, and is one that can be undertaken with reasonable hopes of success, only by a commissariat, which has been trained in business habits; which has acquired a sound knowledge of army administration, and a taste for organisation; which can speak authoritatively on the value and quality of food and forage; and last, but not least, one which has acquired a habit of conquering difficulties.

The able supply officer has been defined as he who makes the available means meet the need. What these means are, as a general rule, may with advantage be enumerated. A supply officer's energies will be directed in two main directions, namely, to the locating the food, and to its conveyance to the place appointed for distribution.

The sources from which food may be obtained are two, namely, the private store-houses of the locality, and the reserve supplies which are forwarded from magazines on the Lines of Communication and at the Base, which, in turn, are stocked from the most convenient markets, local or oversea. It is a general axiom that local resources (plunder, *alias* requisitioning), should be utilised first, and that the supply trains should be in effect what they are in name, viz., reserves. The utilisation of local resources is more often than not an immense economy in transport, and it further has a political object (in an enemy's country) of bringing home the conditions of war to the inhabitants. The methods of carrying out the maxim, "Make war support war," may be brutal, but they are the most merciful in the end. But local resources are an ever varying quantity, and their use is often restricted, if not forbidden, for political or strategical reasons. Proportionately as the local resources fail, so are the magazines called upon. An appreciation of these local resources, as exact as possible, is necessary in order that the magazines and the supply trains shall contain neither too much nor too little. On the one hand there is waste of transport, and the possibility of an unnecessarily large train acting as a drag upon the strategy of the campaign, while, on the other, there is the certainty of a serious check to the operations. It is better to have too much than too little, but it is far better to have just enough.

It is consequently the duty of the commissariat as a body to have a general knowledge of the resources of all countries which are possible theatres of operations, and it is clearly the duty of individual officers to make themselves, at the first hint of war, thoroughly familiar with the resources of the country affected. Only in peace can such information be culled and disseminated.

The conveyance to the troops of the produce of local requisition, or of the magazine reserves, presents considerably greater difficulties. Success can only be assured by the aid of an efficient transport service. A discussion of the relations between supply and transport finds a place later on, but it is necessary to the present argument to assume in advance the truth of the assertion (which, by the way, the point at issue goes far to prove) that Supply and Transport are inseparable

in war. Acting upon that assumption, phraseology is aided by the use of the time-honoured name "Commissariat" as an alternative to "Supply," which at once suggests opposition to "Transport," whereas in its administrative sense Supply includes Transport.

The Commissariat then knows that the provision of an efficient transport is essential to success. It is immaterial how or by whom the transport is raised so long as its control is vested in the senior commissariat officer, and it is officered by officers who are themselves supply officers by sympathy and training. Conversely the supply officer needs a practical knowledge of every variety of road transport, and some experience of the methods, possibilities, and limitations of railways, otherwise he cannot take his share in promoting to the fullest advantage that close co-operation between Supply and Transport, the two branches of the Commissariat, which is so essential to efficiency. Sea transport is also of considerable interest. The British Army is intended to fight over the seas, and the training of the British commissariat officer is not complete until he has gained some experience of sea freightage. Again only in peace can such training be given.

Lastly, it is the bounden duty of all supply officers to study military history, just as much as the fighting officer, although he looks at it from a different point of view.

There can be no question that an officer who is well read, and who has considered the precedents to be found in history, is in the best possible position to surmount difficulties of all kinds, great and small. He is not likely to come across exactly the same circumstances, but instances which have sufficient resemblance. Difficulties beset more or less the entire *personnel* of an army in every enterprise, but they claim the commissariat as specially appointed victims. To combat them successfully is only made possible by the aid of experience and learning.

Frederick the Great wrote: "For whoever is destined for the business of war, peace should be the time of meditation, and war the period in which he carries his studies into effect."

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The foregoing axiom serves as a very suitable introduction to reflections on Transport.

The study of the happenings in previous wars is as essential to the transport officer as it is to the supply officer. History will provide him with a wealth of information. He can prepare himself to profit by the mistakes of others, to start a campaign with the experience which his predecessors did not acquire before the end of theirs. The knowledge so gained has its greatest value in the matter of estimates of the needs of every conceivable situation, and the methods of improvisation.

The fireside tactician talks lightly of moving brigades rapidly here and there about a country, of their mobility, or rather immobility (in his opinion) at which he grumbles. He has not the faintest conception of what the actual circumstances are, how, in fact, an army must painfully draw after it a ponderous chain of advanced depôts, rest camps, lines of communication, etc.

The personal transport of the field army is one that troubles the transport officer comparatively little. But he knows that whereas peace establishments and mobilisation reserves can be relied on to

meet this, it is impossible to legislate in advance for the lines of communication.

Requirements depend upon the size of an army, the extent and nature of the country it will have to traverse, and the existing means of communication in the shape of roads, railways, canals, or rivers. It is impossible under such conditions to maintain in peace a transport service capable of meeting all possible demands, and, if it were so, the question of the transport of itself to the scene of its work would, so far as the British Army is concerned, be a fatal bar to the adoption of such a system. It follows accordingly that our organisation takes the form of systematic improvisation.

There is yet another important reason for it. Every country employs that method of transport most suited to its needs, its geography, and its indigenous draught animals. So we find the British Army using human carriers, camels, elephants, horses, mules, etc., in turn, not to mention vehicles of many varied patterns, conscious of the fact that it has selected, for the time being, the most effective and economical method.

It is therefore a matter of course that a transport officer must exploit local resources to their fullest extent. To collect and organise local transport is no work for an untrained or partially trained officer. It is a duty requiring very considerable talents and experience. The transport expert must be a good judge of a vehicle and of a draught animal, a pack animal, or a carrier. He must be an organiser by instinct or training, and tactful above the average, otherwise he will find it difficult to manage the heterogeneous collection of odds and ends that go to make up Auxiliary Transport. It is essential also, beyond all else, that he be thoroughly experienced in the varied duties which are required more or less of all regimental officers, for instance, military organisation and routine generally, payments, rationing, discipline, and leadership.

Transport with an army is required for three purposes:—

(i). To carry the equipment of the troops, such as picks and shovels, ammunition, machine guns, medical stores. This is included in what is called 1st line Transport, and, as it accompanies the several units to which it belongs into battle, it is essential that its *personnel* should be composed of trained soldiers and accordingly be provided for by expansible peace establishments.

(ii.) To convey ammunition, stores, baggage, and supplies for the daily needs of the troops. This is called 2nd line Transport. It accompanies the troops also (though not so nearly as 1st line Transport), and it is therefore important that it should be, if possible, composed of regular transport units.

(iii). To form movable magazines or depôts on wheels, called the ammunition and supply parks, and to provide the chain of transport connecting them with the rail-head or other depôts in rear. This is termed 3rd and 4th line Transport respectively.

The war establishments of our Army provide for ammunition and supply parks being composed of regular transport, but it is highly probable that under the stress of prolonged or extensive operations 3rd line transport and perhaps even 2nd line would soon have to be kept up to strength by auxiliary *personnel*, animals, and vehicles. 4th line Transport is in any case composed of hired vehicles,

Having received his transport, the transport officer makes it his principal business to keep it in good condition. If he succeeds in doing this, and does so without incurring enormous expense by reason of having to constantly replace the prematurely worn-out by new, he will have every reason to be a proud man, and will deserve well of his general and his country. He has every imaginable difficulty to contend with, and every man's hand is against him. His troubles embrace the want of proper forage for his animals, long marches, and long hours in harness, overloading, abnormal conditions of life — it is unnecessary to quote more. Clausewitz calls the military transport train "that incubus which is always destroying its own work." Well does every supply officer know what a hole in his stores is made by these same men and animals which have just brought them to him. If the cavalry and gun horses have to be content with short rations of forage, so do the transport animals, they get no special consideration although on them depends the existing ration, however small it may be. Overloading is to the transport officer a daily despair. It seems that nothing will convince those persons who are not themselves responsible as transport officers, that a fair load is not just as much as can be crammed into the vehicle without any regard to the nature of the load, which might be ammunition or nests of camp kettles.

Finally, the transport officer must bear ever in the fore-front of his mind the thought that should his transport become inefficient, or unequal to the magnitude of its task, the mobility of the army will be destroyed, and with its mobility one of the conditions essential to its success. The importance of Transport is apt to be lost sight of by the greater importance of Supply. Such an inclination, which can have serious consequences, requires to be carefully guarded against. Is not, therefore, a thorough training in peace plainly indicated as the only road to success in war?

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The relations of Supply and Transport one to another have formed the subject of many prolonged arguments.

The system in use in our Army is to have a combined Supply and Transport corps, the Army Service Corps, the officers of which are trained in both supply and transport duties, and are interchangeable. The general consensus of opinion of all students of military organisation, and the almost unanimous opinion of all officers experienced in the work of the executive supply and transport officers in war, is in favour of our present system. It is true that in the only war in which the Army Service Corps, as an organisation, has been tried, certain changes were adopted. But these changes, though a great deal talked about, were changes in little more than name, and so much as was actually new could have been equally well applied to the existing system without any change of name and without anybody not particularly interested, knowing that anything had been altered at all.

The arguments in favour of a combined Supply and Transport corps are based upon two principal *desiderata;* firstly, efficiency in war, and secondly, economy in peace. For efficiency in war it cannot be gainsaid that an intimate knowledge of one another's duties cannot fail to be of inestimable value to both supply and transport officers. Give and take should always form the basis of the relations between

them. The opposite can only be productive of friction and consequent loss of efficiency. The empty wagon is to the supply officer an eyesore, to the transport officer a blessing. In the face of such divergent personal interests the most cordial spirit of co-operation is necessary. Friction between supply and transport officers is nothing short of disastrous. An army can march without its baggage for at any rate a short period, but it cannot move without its supplies (except upon very rare occasions), and its supplies cannot stir without transport. It may suffer from want in the richest country, if means of communication are not available; unless the stores can be conveyed to the place of consumption they are useless. It is impossible to seriously consider Transport as other than, in the main, part and parcel of Supply, because it is only on account of Supply that the troops cannot on occasion be independent of the train. It would be ridiculous to place the transport officer in such a position that he could wreck the harmonious working of the two.

The second point, in favour of a combined Supply and Transport corps, namely, economy in peace, needs little explanation. It has already been pointed out that the duties of the supply officer are so different in peace and war that the former provides little means of training for the latter. The duties in peace are also very much lighter. A considerable number of supply officers, well grounded in the theory of their duties, must be available for war, but there is no means of employing more than a very small proportion of them on Supply duties in peace. By giving them a dual training, in Supply and Transport, they can be usefully employed in sufficient numbers in peace, and on the outbreak of war those that are left over after the Supply service has been provided for, are available to stiffen the ranks of the Transport, to raise and organise auxiliary cadres, and to train temporary additional officers. It is impossible to maintain in peace a war establishment of officers for both Supply and Transport, one or the other must be largely augmented for war from such sources as may be available. Few officers having more than a very scanty training will be forthcoming, and it is easier to improvise a transport officer than a supply officer, because, as has been explained already, the supply officer requires business habits, experience in financial transactions, and considerable knowledge of book-keeping (to name the most important of a lengthy list of special attainments), while the transport officer performs duties which, though to a certain extent technical and distinctive, yet are analogous to a large degree to many of the duties of the infantry and cavalry officer.

There is moreover nothing unreasonable in demanding that a supply officer shall have been trained as a transport officer and *vice versa*. The transport officer has most to learn in peace, but neither of them have much. Finally, it must be noted that the principle has stood the test of practice, and has demonstrated its worth.

It does not follow that one officer should be placed in direct executive charge of both services. That such would be the consequence of a combined Supply and Transport corps was one of the chief arguments of the upholders of the "separate organisation" theory. They asserted that the nature of the duties of Supply and Transport in war are so widely different, and require each of them such concentrated attention that no one man can effectively control the two at the same time. Probably this point of view was the consequence

of a hastily undertaken and superficial study of history, which brought about an unqualified rejection of pre-conceived ideas and an inclination to rush panic-stricken to the opposite extreme.

It requires very little experience to appreciate the fact that while the executive duties of Supply and Transport cannot be satisfactorily vested in any individual, there is still no valid objection to the existing system of joint organisation. On the contrary it permits of the joint administrative control being placed in the hands of an officer, who, by reason of his own training and his sympathy with both his subordinates, will be able to exploit both services to the utmost. A second objection that is urged is to the effect that it is impossible for an individual to become really proficient as a supply officer and as a transport officer as well. The reply to that is that no individual can hope to become, in peace, really proficient in either, he can only hope to prepare himself to assimilate quickly his first experiences of war. It is also claimed that experience has demonstrated clearly the fact that an individual is not overtasked in seeking rudimentary knowledge in both. Interchangeability is, of course, confined to peace, in war only very special circumstances can be held to justify the transference of an officer from one sphere of duty, with the conditions of which he is rapidly becoming familiar, to another where he will have to begin all over again. On the other hand the possibility of interchangeability in case of need is a comfortable thought, while a liberal application of the principle in time of peace gives the present and future superior administrative officers that experience of both services which is essential, and the junior executive officers of each branch that confidence in their superiors and in one another which is just as necessary.

There exists precedent, in plenty, for joint administration. All modern armies of consequence, except that of the United States of America,[1] place Supply and Transport under one head. It is true that, under the "Intendance" systems of France and Germany, separate supply and transport corps are maintained, but the technical duties of both (in common with other administrative services) are controlled by the officers of the Intendance, who form the Administrative Staff of the Army. In war there is practically no difference between that system and our own so far as the point at issue is concerned.

There is one other important argument that is sometimes preferred against a transport under the control of the commissariat. It is to the effect that, while admitting that the principal work of the transport is to convey supplies and stores, yet it has other responsibilities which are prone to be neglected at the hands of a commissariat officer. The conveyance of the sick and of baggage are the principal items. A practical answer to that is as follows:—The proverb says there is a black sheep in every flock, and it would be idle to deny that such a contingency might arise, but surely the units concerned could and would make their voices heard in no uncertain manner, and the neglect would not be likely to continue for long. Another proverb says, "What is sauce for the goose is sauce for the gander," the question is, which fault is likely to do the least harm, the supply service handicapped by an unsympathetic and antagonistic transport, or a few tents and blankets left behind by a selfish commissariat?

[1] It is probable that this exception will not hold good very long.

Another solution on rather different lines has at times been suggested, namely, to provide the commissariat with its own transport, and a second organisation for the carriage of baggage and regimental stores. This solution has a parallel in the Royal Wagon Train, and the Royal Military Train of Peninsula and Indian Mutiny days respectively, and later still, though in a minor degree, in regimental transport. The system is, however, wasteful. Baggage is not ruled by a constant scale, nor is every regiment continually on the march. It is manifest that to allow a regiment employed on garrison duty to keep idle a complete transport unit is absurd, yet unless such transport is handed over to the commissariat it cannot as a rule find employment. Our regimental transport system recognises this, and the least suspicion of intention to institute distinct organisations for the transport of supplies, and of baggage, is carefully debarred from its constitution, while the point is plainly emphasised in the war establishments recently issued which lay down that the Army Service Corps will provide *all* transport drivers except those for the 1st line. That the principle of a combined Supply and Transport corps is re-established is very clear, and that it is re-affirmed after being subjected to the very severe test furnished by the South African war, speaks volumes for its superiority.

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It only remains to consider how these trained Supply and Transport establishments are best provided. At the outset the fact has to be faced that it is impossible to maintain in peace more than a very small proportion of the numbers required in war, and consequently the question becomes largely one of reserves. The conditions of service of officers and of the rank and file are so different that it is necessary to consider them separately. The officers are the most difficult to arrange for, and it is, unfortunately, to be greatly feared that we have not at this moment the means of producing sufficient trained officers to meet all our needs should the regular Army be mobilised for service abroad. The officers could undoubtedly be found for the field force itself, but not without dis-organising a great part of the remainder of our military machine.

Were we engaged in a war in which our responsibilities ended with the maintenance of an army corps, or two, on foreign soil, this would not matter so much. Consider for instance the South African war. Our home and other foreign stations were absolutely denuded of Army Service Corps officers, but the war was never likely to extend outside South Africa. We ought, however, to be prepared to face the circumstances of a war in which operations may be expected almost anywhere in the world, and there are no limits to what such a war might demand in the shape of supply arrangements. The important point to be borne in mind when considering commissariat requirements is that the greater the extent of the theatre of operations the greater the demands of administration in general, and Supply and Transport in particular. It is not the brigades, divisions, or field armies complete, which eat up commissariat officers, until one wonders where they have all got to, but lines of communication by land, possibly by sea also to a lesser extent, with their magazines, which require maintenance as well as individual management.

On the other side of the picture we have that ever present bogey, money. It is necessary to tread very warily when entering upon any

discussion, a large portion of which must centre round money. Money has been the despair of many would-be reformers, and the wrecker of many brilliant schemes. That we need a large reserve[1] of trained commissariat officers if we wish to consider ourselves ready for all eventualities, is however indisputable. History is crammed with warnings of the consequences that may ensue from neglect of this fact. We are, however, already on the road, unaware perhaps, to what may turn out to be a practical solution of the problem. The development of the volunteer movement forms the basis of this conclusion. Our citizen army exists for a well-defined purpose. Should the evil occasion ever arise for its employment *en bloc* it would fight in our own country. We should put large armies in the field, far larger than we have ever assembled in the whole course of our existence as a nation. The fact that this land of ours is thickly populated by no means does away with the necessity for a commissariat, on the contrary an efficient and well-organised service would be absolutely essential in order that the interests of both the fighting men and the rest of the population might be safeguarded. It is a matter of considerable divergence of opinion as to how the food supply of our country as a whole would be effected by a general war, but it is not intended to discuss that vexed question here, though it is well to bear it in mind and to realise how on the one hand the supply of our forces might be prejudiced, and on the other how the populace must be protected from a hungry soldiery left by a scanty administration to feed itself. In the face of these facts it would be difficult to dispute the assertion that our Volunteer Army requires to be completely equipped with administrative machinery, nor is it disputed, that the auxiliary forces are at present notoriously deficient in this respect. Fortunately there is no need to preach a crusade on that account, since the seeds of a volunteer commissariat have been well and truly sown, and there is every indication that in course of time they will grow into a well-developed organisation.

It is in this forthcoming organisation that it is possible to foresee a part solution to the problem of a sufficiency of commissariat officers with our Regular Army. The patriotism of our Volunteers has already been amply proved, and it is not unreasonable to expect that the Reserve of Officers is likely to benefit exceedingly by the extension of the Volunteer Army Service Corps.

So much, it appears, may come about in time in the natural order of devolution, but the idea has one serious objection in that it savours too strongly of robbing Peter to pay Paul.

A system which might feed one half of the Army at the expense of the other could only end in compassing its own ruin. It would be a great mistake under certain conditions to allow even a portion of the Volunteer Army Service Corps to be registered as a reserve for their regular comrades. Those conditions would exist if the former were only strong enough to provide for the needs of the larger volunteer units. But it is reasonable to surmise that well-ordered volunteer forces will never want for officers, and it is a particularly well-ordered force that we hope shortly to have. That being so there seems to

[1] It is assumed that were a reserve of qualified officers available, there would never be any question that preference would be given to them over the officers of other arms of the service, who can ill be spared from their own units.

be no serious bar to such a bountifully officered Volunteer Army Service Corps that it could afford to be generous to the Regular Army in time of need. The idea may be open to criticism, but it has certainly one good point which is always difficult to attain, namely, cheapness.

And now as regards training. The limitations of peace as a training ground for war have already been emphasised, but so far as it goes, the training of the regular officer presents little difficulty. Much of it he acquires automatically by merely serving and performing his regimental duties. More is provided for by technical courses, but the balance which polishes the individual and transforms the rough into the finished article, is only acquired by private study and experience in war.

The volunteer officer, on the other hand, labours under rather more difficulties. He must lack that knowledge and experience of the working of the machinery of armies which can only be acquired by the regular soldier, and which is such an important aid to a commissariat officer in war. His theoretical education, however, depending as it does largely upon himself, need be in no way inferior to that of his regular comrade.

The provision and training of the subordinate ranks is also a simple matter. What are the subordinate ranks of a commissariat composed of? Clerks, bakers, butchers, and men used to horses for the principal elements, with a sprinkling of carpenters, shoeing smiths, carriage smiths, and workers in leather. The Regular Army has enough of these men for all ordinary purposes. To supplement them there are civilian tradesmen in plenty to fall back upon. There can be no doubt but that we shall get them if we want them, either as soldiers or as civilians serving under temporary engagements. The commissariat subordinate requires only one thing beyond his trade to render him efficient. Like his officer he is not efficient until he has a practical acquaintance with military customs, ways, and things, and he needs to be disciplined. These two *desiderata* are both attainable in a short space of time provided the raw recruits are well sandwiched in with the older hands.

There should be no difficulty in filling the subordinate ranks of a Volunteer Army Service Corps. It should be a *sine qua non* that a would-be recruit should prove himself a skilled tradesman before he is accepted. The Volunteer unit cannot attempt to teach more than the methods of applying skilled labour to the best advantage of the Army in general, and to inculcating habits of discipline. But that is exactly what is wanted.

It cannot be said that the subordinate ranks of a commissariat give cause for anxiety, provided always that the officers are well trained. It is an ample supply of well-trained officers that we should look upon as the key to general efficiency.

THE RUSSIAN INFANTRY SOLDIER.

By Major M. M. MACOMB, General Staff, U.S.A. (late Attaché with the Russian Army in Manchuria).

Reprinted by permission from the *Journal of the United States Infantry Association.*

Continued from August JOURNAL, p. 1022, *and concluded.*

The Rifle.—The Infantry were armed with the "3 line" rifle, model of 1891. It has no cut-off, but can be used as a single loader when the magazine is empty. The magazine is situated beneath the receiver, and is loaded by a clip containing 5 cartridges. The smokeless powder is excellent and is said to be a pyroxiline preparation. The principal data regarding rifle and ammunition are as follows:—

Weight, with bayonet	9 lbs. 12 oz.
Total length, with bayonet	5 ft. 8 in.
Total length, without bayonet	4 ft. 3¼ in.
Calibre	0·300 in.
Number of grooves	4
Twist	1 turn in 31·7 cal.
Breech section	Straight bolt.
Capacity of magazine	5 cartridges
Rifle sighted to	2,700 paces (2,100 yds.)
Total weight of cartridge	361·0 grains
Cartridge case (drawn brass)	114·6 ,,
Powder charge	32·9 ,,
Bullet (lead, nickel and copper jacket)	213·5 ,,
Initial velocity	2,000 f. s.

The rear sight is of simple construction, being a folding leaf of the open type, without adjustment for windage. The front sight is upon the bayonet stud, and in campaigns the bayonet is always kept fixed, the scabbards (which are of leather with brass tip) not being taken.

The bayonet shaft is about seventeen inches long, four fluted, with a strong wedge-shaped point, permitting it to be used as a screw-driver when desired. Total weight of bayonet 12½ ounces.

The dragoon rifle is identical with the infantry arm, except that it is 2¾ inches shorter and 12 ounces lighter. It is furnished with the same bayonet and with this fixed is exactly the same length, over all, as the Japanese infantry rifle with bayonet fixed, *i.e.*, 5 feet 5¼ inches.

The rifle stood the test of the campaign exceedingly well. I could get no trustworthy data as to the deterioration of the barrel due to use, but heard that the breech blocks gave trouble by jamming now and

then, and that the bayonets sometimes lost their temper, due to the heat of rapid fire, and became bent. There is a ramrod for cleansing, but no convenient oil supply, as with us. I should say in general that the men did not take sufficient care of their weapons.

The climate of Manchuria, with its long continued rains, alternating with periods of drought and dust, and its extremes of heat and cold, requires extra vigilance in this respect.

So far as regards power and accuracy the weapon is in line with those of European nations and is superior to the Japanese arm, whose small bullet is perhaps unnecessarily merciful.

Cases are on record of Russian soldiers having returned four times to the colours after receiving four wounds with this bullet, and statistics show a greater percentage of recovery among the Russians than among the Japanese from wounds of this class.

Our new Springfield rifle should prove itself in a campaign superior to the Russian rifle so far as accuracy and power is concerned.

The Russian infantry, previous to the battle of Mukden, at least, seemed to place little stock in individual accuracy, but were believers rather in volleys and magazine fire, seeking to gain effect by volume of fire. The men were not trained as individual marksmen, although there was ample time for target practice. I was informed by an officer of high rank that he had been able to silence a Japanese battery, which had located at over 2 versts range (2,500 yards), by using high angle volley firing of a battalion in trenches. In fact, the long range firing by volleys was frequently resorted to when there was a good target and the fall of the shots raised a visible dust cloud to show the range.

The infantry did its range finding practically by estimation, which proved to be the best method. Suchet range finders were recommended by regulations, but I doubt whether they were ever used. The Russian officers, as a rule, are adverse to refinements and instrumental aids in general. The eye and the rifle were regarded as the best range finders.

The deep rooted belief in volume of fire doubtless caused an immense waste of ammunition, for the expenditure in battle was enormous. Thus at the battle of Liao-Yang the 34th Siberian Rifle Regiment, belonging to Stakelberg's Corps, estimated its expenditure at 1,200,000 rounds. This was mostly used during 48 hours of exceedingly severe fighting on the Russian right of Liao-Yang against Oku's determined assaults, August, 30th-31st. Again on July 31st, 1904, the 122nd Infantry Regiment, 31st Division, X Corps, expended 303,000 rounds, and the 123rd Regiment, 450,680 rounds. To provide for this required a good system of ammunition supply, and this the Russians seemed to have, for we seldom hear of their running short of cartridges. The following was required by regulations, and was the minimum:—

On the man	120	rounds.
In the regimental ammunition cart ...	66	,,
In flying parks	72	,,
In local parks	170	,,
Total	428	rounds.

In Manchuria the ammunition habitually carried by each soldier was disposed as follows:—On the waist belt in two leather pouches, one on either side of the buckle, 60 rounds; in a bandolier, carried over the left shoulder, 30 rounds; in a reserve pouch of canvas, suspended by a strap of the same material over the right shoulder, 30 rounds. The pockets in the bandolier were double and six additional clips (30 rounds) could at any time be added so that this equipment allowed 150 rounds per man. Not satisfied with this, the amount carried by each man was sometimes increased to over 300 rounds by sewing pockets in the shirts, and by carrying an additional reserve in the kit-bag. This was done when working in the hills when it was practically impossible to supply the firing line by normal methods.

It should be remembered that the Russians, fighting as a rule defensively from trenches, were able, in anticipation of an attack, to place therein huge supplies of cartridges, either leaving them in the hermetically sealed zinc boxes (containing 300 cartridges each) until wanted, or depositing the clips loose in receptacles conveniently disposed along the firing lines of trenches and forts. To enable the men to mechanically cover with their fire certain areas to repel sudden assaults, especially at night, wooden rests were placed, thus enabling magazine fire to be used with certainty. In short, everything was arranged to get results from volume of fire rather than by intelligent use of the accuracy and range of the rifle. In consequence of this the forts and trenches were so plentifully supplied that large quantities of ammunition had to be abandoned after each great battle. This, of course, enters into the total expenditure given for certain regiments, and if one tries to form an estimate therefrom of the proper amount actually necessary to supply each man an altogether exaggerated idea is reached, even for the fiercest battle.

The lessons to be learned from these fights are: first, to teach the soldier *ab initio* the power and capability of his weapon; second, to make him economise his ammunition by reserving his fire until a target has been located; third, to put up the ammunition in such form as to permit the man to double his regulation supply without alteration in equipment, and at the same time allow a reserve to be distributed along the firing line, which may be easily carried along in case of advance or retreat. All these points were neglected by the Russians, and the consequence was the man was often weighted down with double the amount of ammunition actually necessary, and much was lost in the trenches.

The more confidence the man has in his weapon, based upon ability to use it successfully, the better will be the fire discipline, the more certain the fire direction, and finally, the nearer will the fire action approach its maximum effect.

Long Range Fire.—Another lesson to be learned is the value of long range firing upon well located targets. If it be possible under favourable conditions to silence a battery at two versts by infantry fire, as certain Russian officers claim, then the long range capabilities of our own weapon in this respect are well worthy of test by the troops.

It was also found that in advancing against the Japanese lines losses often began to occur from long-range infantry fire some time

before its source could be located. Experience showed that the zone of effective infantry fire began at over two versts (about 2,500 yards), so that to lessen losses the company would have to assume the extended order at this distance.

Russian officers complained that their firing regulations underestimated effective rifle range by about 1,000 yards, and, in fact, did not give sufficient importance to long range work. This would seem to be a lesson to heed in modifying our own firing regulations to meet the capabilities of our new rifle.

The Bayonet.—Ever since the days of Suvarov, to whom is attributed the saying: "The bayonet is a strong man; the bullet a silly woman," the Russian Infantry has had an unbounded faith in the value and power of their shock action. For this reason, in campaign, they have converted their rifle into a permanent pike by keeping the bayonet always fixed. Since a bayonet of the Russian type is useless except as a pike point, this regulation is a wise one, for no soldier even as patient and long suffering as the Russian can be trusted to carry dangling at his side during a whole campaign something entirely useless in his general daily life.

With its slender form and extra length the Russian "pike" is superior to the Japanese as a thrusting weapon, and this was increased by the superior strength, weight, and reach of their men. Due to its form, the Japanese knife bayonet did not penetrate so easily, and the Russians claimed that because of this the Japanese often struck downward or sidewise so as to get a cutting rather than a thrusting effect. This method probably would not have been used had the point been better shaped for thrusting. It may be said, however, that when a successful thrust was made with the knife bayonet the resulting wound was more painful and dangerous, as instead of pushing by arteries and tissues it cut them with its double edged point. I noticed that whenever a Russian could get one of these bayonets he was glad to keep it, finding it a handy camp-knife.

The question of bayonet or no bayonet is an interesting one to us at this time of adopting a new rifle. Some of our officers think it a useless encumbrance. To be sure the casualties from it even in this last war, where we heard so much of bayonet charges, were almost negligible compared to those from the bullet. But this could not be otherwise, because in modern battles bullets are always flying and bayonets only occasionally clash. We heard many times of positions taken at the point of the bayonet without firing a single shot. This does not necessarily imply great carnage with the bayonet. As an actual fact in most cases the defenders did not wait for the hand-to-hand struggle.

Experience shows that in every battle there will be important positions which cannot be taken quickly enough, perhaps not at all, by fire action alone, or by turning movements. The assault must be resorted to. This was the only way in which the Russians could retake Putilov Hill during the battle of the Shaho. They could not afford to let the Japanese retain a point commanding a great highway through the centre of their position and enfilading a portion of their lines.

Is it wise then to take from the soldier anything which gives him confidence or adds to his efficiency in a desperate dash? I think

not. A good bayonet and careful training in its use will increase the *moral* and enable our soldiers to use advantageously the aggressive spirit they have always shown, and which we must continue to cultivate by every means in our power. The best form for an American bayonet is worthy of far more thought than has yet been given it. Be this as it may, we should not forget that one lesson of the war is "do not abandon the bayonet."

The Revolver.—Officers, officials, sergeant-majors, regimental buglers and mounted orderlies were armed with swords and revolvers. The revolver is a seven-shooter; triple action for officers, single for men; calibre, 0·3-inch; weight, 1·74 pounds; charge, smokeless powder, 12·34 grains; bullet, 108 grains, with flattened point; muzzle velocity, 902 f.s.; is worn in a black, patent leather holster for officers, tan leather for men; and is secured by a neck cord.

Machine Guns.—At the outbreak of the war the Russians were not well supplied with this comparatively new weapon, not having realised its importance. They learned from bitter experience its value, and before peace was declared many of the higher commanders seemed to want them supplied at the rate of one gun per company, battery or squadron. Actually they are being supplied as rapidly as possible at the rate of one machine gun company of 8 pieces per division, or 1 per 2,000 bayonets. These guns are at the disposition of the division commander, and are organised in companies for purposes of instruction, and attached to a regiment for administration purposes only. The lessons of the war showed that they should not be used singly, but in pairs wherever it was necessary to distribute them. From my own observation I should think that they should be supplied at not less than 1 gun per 1,000 bayonets, or in our service at the minimum rate of 3 guns per regiment. In any event the lesson for us to heed is, that the machine gun detachment must be officered and manned, not by detail from the regiment, but by special provision over and above the present *personnel*. The weapon will never be of any value to us until this principle is fully recognised throughout the Service. It is no longer an experimental arm; it has come to stay as a necessary adjunct to all properly organised infantry.

Regimental Organisation and Supply.—A Russian infantry regiment of the line is as large as one of our brigades. It is commanded by a colonel, its 4 battalions by lieutenant-colonels, and its 16 companies by captains. It is entitled to 13 mounted orderlies, 10 of which are at the disposition of the colonel and 3 are for detail to corps, division and brigade staffs.

Two privates in each company are equipped and trained as buglers, one of them acting as marker and carrying the marker's flag on his bayonet; six men per company are trained as litter bearers and four as scouts (called by the Russians, "okhotniki" or hunters). As the war progressed the need for mounted scouts was strongly felt. The East Siberian Rifle regiments organised them first in detachments of about 150, detailed from the various companies and mounted on stout Manchurian ponies. The men were selected because of previous experience as woodsmen and hunters and comprised the best shots in the regiments. A specially energetic young officer was chosen to command the detachment and generally had a subordinate officer as assistant. These mounted "okhotniki" performed the near scouting

for the regiment, examined roads and trails, and, in fact, acted as ground scouts in case of advance.

The Petrovsk regiment of the 1st European Corps, which arrived before Mukden, August 8th, had its mounted scout company organised and trained in time to take part in the battle of the Shaho in October, and reported that they rendered very valuable service. The question of mounted orderlies is important for us to note. Even if we never get mounted scouts for our infantry, we should at least insist upon a proper quota of mounted orderlies.

The regiment is both a tactical and administrative unit. It has a fully organised staff and a band. The battalion is a tactical unit only, with an adjutant in addition to the company officers. The peace and war establishments of an infantry regiment of the line are as follows:—

Peace.

Company.—4 officers, 112 non-commissioned officers and men.

Battalion.—16 officers, 1 official, 443 non-commissioned officers and men, combatant; 5 non-combatant.

Regiment.—70 officers, 7 officials, 1,815 non-commissioned officers and men, combatant; 71 non-combatant; 38 horses (including 13 mounts for orderlies).

War.

Company.—4 officers; 240 non-commissioned officers and men, combatant; 4 non-combatant; (220 bayonets); 5 horses; 3 vehicles (1 one-horse ammunition and 2 two-horse baggage).

Battalion.—18 officers; 1 official; 958 non-commissioned officers and men, combatant; 23 non-combatant; (883 bayonets); 36 horses and 17 vehicles (1 officers' baggage, 1 medical store cart, 1 ambulance cart, 2 ammunition, 12 company).

Regiment.—79 officers; 7 officials, 3,784 non-commissioned officers and men, combatant; 150 non-combatant; (3,535 bayonets); 160 horses; 80 vehicles (6 baggage, 5 officers' carts, 1 sanitary wagon and 68 battalion).

The wagon train of an infantry regiment is divided into two echelons or lines as follows:—

First Line, Marching in Rear of Regiment.

	Vehicles.	Horses.
1st echelon of company ammunition carts	8	8
Medical store carts	4	8
Sanitary wagons (litters, etc.)	1	2
Ambulance carts	4	8
Baggage (regimental commander and staff) ...	5	5
Non-commissioned officer in command		1
Spare horses		4
Total	22	36

Second Line, Marching with Heavy Baggage.

	Vehicles.	Horses.
2nd echelon of company ammunition carts (6,000 rounds)	8	8
Battalion ammunition carts (14,400 rounds) ...	8	16
Company baggage wagons	32	64
Battalion baggage wagons	4	8
Regimental baggage wagons	6	12
One officer, commanding, and five non-commissioned officers		6
Spare draught horses		10
Total	58	124
Aggregate	80	160

Supplies.—The soldier's ration consists of biscuit, 1 lb. 5·7 oz. (or 2 lb. 4 oz. bread); cracked grain, 3·6 oz.; fresh meat, 14·4 oz. (or 10·8 oz. preserved meat); salt, 1·65 oz.; vegetables, 9 oz. fresh (or 6 oz. dried); butter or fat, 0·75 oz.; meal 0·6 oz.; tea, 0·22 oz.; sugar, 0·45 oz.; pepper, 0·025 oz. Total 2 lb. 4 oz. As already stated, the soldier carries with him 2½ days' biscuit and salt. The remaining articles and a further supply of biscuit are carried in the 2nd line baggage. These include 1½ days' biscuit, 3 days' cracked grain, 6 days' salt, 4 days' tea, and 4 days' sugar. Cattle on the hoof follow the heavy baggage. Forage consisting of 3 days' grain and 2 days' hay is carried in the regimental train.

The field kitchens proved so satisfactory that it is proposed to supply them throughout the army to all units. One of their greatest advantages was that the meat could be issued direct from the butcher to the company cooks and put at once in the boiler, thus undergoing thorough cooking even on the march, at the end of which hot soup would be available. This seems to be the most economic and sanitary way of utilising the meat ration yet devised.

Experience showed that the meat ration should be doubled, however, and given in two meals whenever practicable. No emergency ration was used, and only occasionally was tinned beef available. The Russian soldier does well for days, however, on biscuit, tea and sugar —a very good emergency ration in itself except for its bulk.

The field kitchens seemed to form an echelon by themselves and followed as closely as possible their regiments or independent units. Special forms for the staffs' messes were also used, which kept in general with the staff baggage. On the march, donkeys and pack horses with special saddles were also used to keep the officers' supplies close at hand. These would arrive when carts would be mired in the rear.

Marching.—The soldier with his heavy pack did not march rapidly, averaging generally about 3 to 4 versts an hour, but there was little, if any, straggling. The ordinary quick step is 120 to the minute, 130 under effective rifle fire, and as rapid as possible advancing to the attack, the length of pace varying from 28 to 35 inches. The double step is 42 inches and about 180 to the minute. The ordinary daily march was from 18 to 24 versts (12 to 18 miles).

General Characteristics and Discipline.—There are no more enduring or uncomplaining men in the world and none of better natural good and kindly feeling towards others than these peasant soldiers. I observed these qualities many times on the march, and when assistance was asked for they were ever ready to render it. Naturally hospitable, they would share their tea or bread, once their confidence was won, even with a stranger, and insist on his taking it. They seemed as simple as a lot of children. They were eager for news of the outside world, loved to look at illustrated journals, and were intensely fond of being photographed, hoping to appear in some picture which their friends at home would see. Their natural feeling toward their officers and superiors is excellent, and there are no men who will respond more quickly to kindness and tact. They are more easily managed than our own men, and when we hear of serious breaches of discipline we may be sure that they have been forced into it by unjust and ill-advised actions of those over them.

They are as faithful as dogs to those who have won their affection, and will go anywhere with one in whom they have confidence. They need leading and direction much more than our men do, as they have little natural initiative. They are, however, naturally susceptible to influence by a stronger nature, and will respond quickly to an officer of spirit, dash, and originality. Officers, however, they must have, as they quickly become helpless without their direction.

In Battle.—The Russian soldier is a brave man, and, while not imbued with an enthusiastic spirit during the Manchurian campaign arising from a belief in the justness and necessity of the war, showed a dogged obstinacy when facing his enemy.

He realised that there was something wrong somewhere, and could not understand at first why the little Japanese always got the better of him. Later he began to think that his officers were at fault. This was not altogether the case, but the trouble lay in a system of training which permits such lamentable ignorance of the methods necessary to success in modern battle.

Troops advancing to reinforce positions under fire continually did so in too close order and failed to take advantage of cover. In fact, the officers seemed to think it cowardly to teach their men such tactics. A company officer on being questioned as to this, said in substance: "My men have not been practised in this method of advance. If I open them out too much, and make them take cover, many will not move forward at command, so that as we advance the company is melting away and I cannot keep control." In other words the sole training seems to have been to teach the men to advance bravely as a unit and to fire rapidly, and, when near enough, to use the bayonet.

A withdrawal was made on the same system, the whole unit leaving *en masse* instead of by sections, so that a part might cover by their fire the retreat of the others. The same kind of mistake was continually made in moving forward the larger units to the attack with the firing line in too close order, followed closely by the reserves when still too far from the enemy, thus making a large target, instead of taking advantage of cover and by degrees gaining a nearer position from which such an attack might be made with some chance of success. It was thus impossible for the Russian infantry to push home an attack successfully. There seemed, also, to be a belief at the head

of the army that they were stronger on the defensive than on the offensive, and yet the whole spirit of their training and armament was just the reverse.

It seems to be too late in war to change a system and get rid of old-fashioned notions, for at the battle of Mukden during the severe fighting on the west against Nogi's determined assaults we are informed of regiments being led into battle in close order, with bands playing and priests bearing ikons at their head, all under the leadership of a corps commander.

The Russian soldier is very religious and seems to get much comfort from his religion, and perhaps commanders may find that this quality enables them to get results not otherwise attainable. Such spectacles as those above described are awe-inspiring, but they are not modern war, and until these out-of-date methods are eliminated Russia will never get the best from the magnificent material at her command.

We witnessed the work of infantry from European Russia and from Siberia, of infantry of the line and rifle regiments, and, if asked which were the best troops, we may say that the Siberians as a whole were as good as the Europeans, but that the flower of the infantry of the Manchurian Army is to be found among the East Siberian rifles. Perhaps the judgment of some one who viewed events from the Japanese side would be more trustworthy, but these troops seemed to be organised on a more modern basis, for they had mounted scouts, and machine guns, and, being Siberians, were more accustomed to the conditions of service in a country like Manchuria than the European troops, and were better woodsmen and hence more practical soldiers.

We must give the Russian officers credit of appreciating the fine qualities of their men, for they did not hesitate to speak highly of them. We would hear such remarks as: "Our soldiers are the best in the world," or "Our old peasants will go against anything," or, "These kind-hearted fellows are our brothers in battle. It should be the aim of each officer to prove worthy of them." As an entirely unprejudiced observer from another hemisphere I too take this opportunity of expressing my admiration for the steadfast, long-suffering soldier of the Russian Infantry.

INFANTRY COMBAT IN THE RUSSO-JAPANESE WAR.

OBSERVATIONS AND PERSONAL REMINISCENCES OF THE COMMANDANT OF A RUSSIAN COMPANY.

Translated by permission of the French Minister of War from the *Revue Militaire des Armées Etrangères.*

Continued from August JOURNAL, p. 1053.

II.

THE MARCH IN THE ZONE OF INFANTRY FIRE.

THE MOVEMENT OF LINES OF SKIRMISHERS.

FROM 2 kilometres (1¼ miles) the losses caused by infantry fire begin to be felt; from 1 kilometre (⅝ mile), this fire develops enormous power. What is, then, to be done? Must we conform to our Regulations and not open fire at long ranges? But the enemy pays no heed to our Regulations, and overwhelms us with bullets. Should we, then, only fire at extended objects? But where to find these extended objects when on the actual battlefield, one is subjected to an enemy's fire without seeing anybody? If we consider as effective all fire which inflicts losses, then rifle fire is effective up to the extreme limits of distance for which the rifle is sighted. And also, it would have an undoubted advantage, because the fitting of our sights allows of the long range of our weapon being used to the full extent of its ballistic power.

Two kilometres (1¼ miles) is the practical limit at which the infantry combat, properly so-called, commences.

The deployment of the chain of skirmishers generally takes place at a greater distance, unless, on the other hand, the ground permits of pushing the columns further, keeping them under cover by taking advantage of any undulations. It even may happen that the column will be able to approach to within some hundreds of paces of the position to be attacked. However, this is a very risky proceeding, because one never knows exactly how much cover the ground will afford.

The fighting approach comes to an end some hundreds of paces from the enemy's position, sometimes nearer still. In the battles of October, outside Mukden, my company once occupied a position so close to the Japanese that we could very distinctly hear their conversation in the trenches, their questions, and the grating of the tools with which they dug out their shelters.

The deployment into the line of skirmishers is done by entire companies all at once. There is no sense in company supports; they always sustain some losses, and may not immediately open a powerful fire, which would furnish the means of dominating or weakening the enemy's (the same principle holds good for the artillery). But infantry fire is so violent to-day, that a small unit loses at once so many men that the number of firers rapidly melts away, and its fire cannot gain intensity.

It is necessary to remark that not only companies but even whole battalions often deploy, so that there are only the regimental reserves which can be counted on.

The chain of skirmishers only moves at the run; if it is deployed behind a crest, a shelter, it advances along its whole front, as the Regulations direct. But if it is necessary to move forward on open ground, then the men move forward individually in Indian file, either creeping, or running stooping down, taking advantage of the smallest inequality of the ground.

In general, when advancing under fire one stoops down as much as possible; even ridges and hummocks in the effective zone of infantry fire do not shelter from bullets. A hail of bullets, which sweep the counter-slope in the descending arc of their trajectory, or which strike obliquely on the crest, or even rake it, defeat all the precautions taken for protection. And, if the enemy's position be a commanding one, the bullets so plough up all the internal slope of the ground that the best means of safety is to run as hard as one can to a new position and then lie down. The more one approaches the crest, the more necessary is it to stoop, and generally to creep along.

The Deployment of the Reserves.

The formation of the reserves depends on the cover; they can rarely advance in column. In the mountains it is sometimes possible to bring them up massed with, comparatively speaking, trifling losses. But in open country, the movements of reserves in column—and not only the regimental reserves but even the divisional ones—inevitably involve losses which completely disorganise the units. Movements in extended order, although involving less relative loss, are themselves very risky.

At the battle of Sandepu, during the fighting in January, our reserves suffered such heavy losses that they had to resort to extended order; otherwise they would have been reduced to a state of complete dissolution. In general, under a serious fire, this order is the only one that can be advised for the reserves.

Fire Discipline.

One of the principal elements of the efficiency of infantry fire is the right judging of the distance of the object. In action this is by no means easy. The Regulations enjoin:—The ranging of fire, the training of the eye, the range-finder, the indications furnished by neighbouring artillery. As a matter of fact, during battle one only makes use of the two first methods. The range-finder, in view of its complicated mechanism, the inaccuracy of its results, and the particular conditions that its employment necessitate

(signals, distinct isolated objects), is not used in practice. Where to find signals or guiding marks, when often there are none? To expose a soldier under fire is to make a target of him, and probably for no use; because, in order to measure a base to a foot, a level surface is necessary, and this generally is the one thing wanting. All the procedure connected with the employment of the Regulation Range-finder is complicated, and consequently not suited for battle. Moreover, there is generally no time for it.

The field-glass range-finders require, a condition not always realised, that an enemy, whether mounted or dismounted, remains where he is, and that one can determine the distance by the parallax.

The ranging by means of volleys gives good results, when the conditions of the ground are favourable; in other words, very rarely.

Finally, as the sole practical method to be recommended, there remains the judging of distance by the eye. This is why it is so extremely important to train the eye in time of peace to judging distances and to take every opportunity for developing this instruction.

The direction of fire during battle has become a very difficult matter. The men have a great tendency to open fire from the moment they lie down, even without waiting the order to fire, the determining of the object, the indication of the range, and the nature of the fire.

This haste is provoked, above all, by an irresistible need to divert the mind and stifle the consciousness of danger by a recrudescence of activity; but it is very harmful to fire efficiency and the maintenance of order during battle.

It is impossible to direct the fire when the men have not previously received a thorough training. The noise of the fusillade along the chain, the bursting of the enemy's projectiles, the reports of our own artillery, are reasons why the voice can scarcely make itself heard. It has several times happened, that it was necessary to shout orders into the ear. If we add that the front of a line of a company is not less than 400 paces, it will become evident that it is almost impossible for a company leader to command by his voice his chain of skirmishers. It is advisable again to remark that, in the mountains, the direction of the sectors of battle is rendered, in general, extremely difficult, in consequence of the extent of the positions. This extension is partly explained because the ravines and hollows between the summits are not occupied by the chain, and in part also by the tendency to overlap the flanks of the enemy. Finally, the fire itself, even with extended positions, constitutes a difficult barrier to overcome.

The chiefs of sections are often themselves unable to direct their men by voice; which is the reason why volley firing has to be given up and recourse had to "Magazine" fire.

It is the whistle, however, repeated by all the non-commissioned officers of the company, which is heard best; thus it is advisable that the men should be trained to obey the whistle. By perseverance and zeal much can be effected in this respect; so much so that at the moment when the action is most severe, the firing can often be made to cease along the whole chain at a whistle from the company leader.

The difficulty of directing the fire increases proportionally to the violence of the enemy's, and to his approach, especially in the defensive. The men become more restless, the tension of the nerves increases, the danger seems nearer and greater.

It is at this moment, above all, necessary to keep the *personnel* well in hand, and to carefully watch that the fire does not degenerate into a disorganised, wasteful discharge of their rifles, a sure sign that the men are getting out of hand.

The great obstacle assuredly is that nervousness, which shows itself even among the best seasoned troops. Good training in time of peace, with an iron fire discipline, can alone be a sufficient warrant for the maintenance of order in the line during battle and will ensure a truly effective fire.

Omissions in preparation show themselves in battle with prominence and clearness. In order to make them good we have been obliged to drill the men in extended order in camp. These drills have been of great advantage, but it is not always possible to have them; the work of putting positions in a state of defence, the organisation of foot-bridges, reconnaissances, etc., compel us frequently to content ourselves with the hard lessons given by the enemy under fire.

With regard to slow fire, it is never applicable except for firing at isolated objects by the best marksmen.

Fire Power and Expenditure of Ammunition.

In what concerns the development and the power of fire-arms, one is able to arrive at a very clear idea of it from the enormous losses sustained by the troops in battle, and by the proportion of the losses caused by the rifle relatively to those caused by the other arms; this proportion is as 85 per cent.

The percentage was the same in preceding campaigns, so that the relative value of the arms has not changed; as a set off, the expenditure of ammunition in battles of to-day is much higher than formerly. This expenditure was so great in the Siberian troops that it was necessary to include all the two-wheeled ammunition carts told off to each regiment in the fighting train. The necessity for this measure has been made evident to everyone who has witnessed the rapidity with which the supply of cartridges melts away during battle. Scarcely have boxes of cartridges been supplied to the chain than they are already empty.

According to the calculations made by our regiment—about 1,900 men strong—it expended, in the fighting round Liao-Yang, 1,200,000 cartridges. Rapid fire has been sometimes so prolonged that the stocks of the rifles began to char; the heat has made the points of the bayonets bend, and it was necessary to unfix them as they prevented firing.

It was impossible to form any idea before the war of the unprecedented proportions that infantry fire has taken. It is incontestable that such an intensity has a disadvantageous influence on its efficiency, and that the great proportion of the bullets fly into space. Involuntarily one asks if it would not be better to fire more slowly, but with greater judgment and precision.

The fact is, that the great distances at which one opens fire, and the conditions of actual battle, where the enemy is, for the greater part of the time, literally invisible, compel us to try and make some effect by a mass of bullets, and to cover a given surface with a hail of lead. It is this mass of expended ammunition which ought to make up for the want of precision. It is proper also to state that

the short length of service has a disadvantageous influence on self-control and accuracy of fire.

The Japanese infantry, also, in regard to accuracy of fire, is far from being up to the standard of their artillery. The Japanese soldier, by the rapidity with which he loads and fires, deserves to be called a Mitrailleuse. But he aims badly, and most of his bullets fly too high; it is right to remember this. Personally, I have had occasion to observe during the attack the manner in which the Japanese soldiers rested their rifles on their knee, or on the reverse of the trench, and loaded and fired with incredible speed, without aiming.

During the attack of the night of the 12th October, where our columns of companies advanced solid as walls, the Japanese, up to the last moment before the bayonet charge, continued their fire almost to point blank. Nevertheless, our losses were not great, the bullets passed in swarms above us.

The Armament of the Russian Soldiers and Officers.

It is easy to understand that with the intensity of the actual fire, the rifles frequently get damaged through wear; this is above all the case with the moveable breechblock. The only means of remedying this in battle is to take the rifles of the killed and wounded; exchange the bayonets and breechblocks, or take the weapon as it is.

What most contributes to the deterioration of the rifle is insufficient cleaning, a fault which above all made itself felt during the prolonged rains and with the sudden changes of temperature in Manchuria. During the dry season, the dust which fills the air lodges in the guns, and in the joints of the breech pieces. Men clean their rifles in the bivouac, but there is often a want of grease for them. When possible, melted lard was used instead; but generally, the rifles that I inspected were only fairly well kept.

In spite of these unfavourable circumstances, our rifle has remarkably sustained the strain of war.

The replacing of the worn out rifles by new ones was made with far too much economy. After Liao-Yang, only eight were supplied to each company.

We have several times had opportunities to prove by experience the accuracy of our weapon, and it is difficult to imagine that a greater rapidity of loading should become necessary, because the consumption of cartridges is already enormous.

Among some faults that our weapon has, may be noted that there is often a difficulty in opening and closing the breech; sometimes, also, the point of the bayonet bends under the heat engendered by an excessively intense fire. But, as a weapon for thrusting, our bayonet is better than the Japanese; theirs, in form of a large and pointless knife, is rather a weapon to cut with; thus the Japanese does not thrust with his bayonet, but cuts downwards with it.

The armament of infantry officers does not stand on the same footing as that of the soldier. When occupying a position the officer could do without a weapon; he acts only through his word of command and moral authority; but on reconnaissance, and in assaults, he requires a revolver and sword. His revolver, once he has fired his seven rounds, is of no more use to him; to reload it is absolutely impossible at a time when each second is precious. There remains the

sword, which is ordinarily of use in an assault. But it is difficult to parry bayonet attacks with a sword, which is why an officer is badly protected, if he has not succeeded in securing a rifle.

The Question of Artillery Supports.

An order of the Manchurian Army directed that a company should be detailed as support for each battery in position. The necessity of an infantry support was caused by a fear lest the guns might fall into the hands of the enemy. Where guns were captured, both with us and the Japanese, it was principally due to want of support at a critical moment.

It is bad for a regiment having to detach companies with the artillery, but it is a necessary evil. If, out of three battalions, one has to weaken oneself by detaching two companies for the artillery, and one company for the train, it means 500 bayonets at least, or a diminution of the effective by 25 per cent. Would it not be better, in peace time, to create special companies as artillery supports? Regiments would then preserve all their fighting force; the supporting companies would form one whole with their battery, would defend it better, and, in case of need, would furnish men to fill vacancies at the guns.

Résumé of Battle in the Zone of Infantry Fire.

To sum up, the actual fighting of skirmishers presents the following characteristic traits:—

1. Immediate deployment of entire units as skirmishers;
2. Disappearance of the small company reserves;
3. Tendency to at once develop the greatest fire power;
4. Advance of the chain on the run, stooping and even crawling, and if the fire is heavy, by successive rushes of individuals.
5. Movements in the zone of effective fire in Indian file, with a certain distance between the men;
6. The greatest difficulty in maintaining the command of fire, requiring a very severe preparatory discipline in time of peace;
7. Development of infantry fire in an unprecedented manner;
8. Enormous expenditure of ammunition, necessitating a continued renewal and of an intimate connection between the infantry regiments and the artillery parks (ammunition sections);
9. Rapid deterioration of rifles, necessitating their being frequently replaced;
10. The bloody nature, costly, and at the same time wearing and indecisive, of skirmishers' action.

The Crossing of Bayonets.

Let us now pass to another phase of the infantry combat, the most decisive, the preparation for which requires, in future, not hours,

but days, and the result of which gives the definitive preponderance to one of the two opposing parties. We refer to the assault and bayonet charge.

It is strange to now hear officers depreciate the bayonet, as of no account or only concede to it a chance value, that of an unimportant accessory of the rifle. One fact is, nevertheless, incontestable. It is that in this war the bayonet has been employed the whole time and regularly; there has not been a battle of however little importance without the bayonet being used.

Is it necessary to recall the fighting on the 12th, 14th, and 16th October, where bayonet fighting raged along the whole front of our Army? Personally, as witness, and as an actor in the bayonet assaults, I have seen the *arme blanche* clear, in a few minutes, trenches, on which for three days we have rained thousands of bullets. I have seen the moral effect on the victorious soldier after a bayonet assault. I have seen how implacable and decisive such a shock is; after it, the die is cast, there are only the living victors and the vanquished dead.

The last fire position nowadays, instead of being at a distance, is, on the contrary, close. Our Regulations point it out as between 300 and 150 paces of the enemy's position. If, from this distance, one launches a bayonet charge, it is doubtful if many of the men will come to a hand to hand struggle. The greater part will be placed *hors de combat* before doing so, the others will go right about to the rear. With a defender, who does not lose his head, and delivers some few steady volleys, one can count upon the assault failing.

The real fact is, the last position to-day is no more than some dozen of paces from the enemy. On this position, one remains glued to the ground, often for a long time, because, neither side ventures to risk an assault. Sometimes the two adversaries remain lying face to face at only fifteen to twenty paces off each other, until some gallant men bound from the ranks with a shout and hurl themselves upon the enemy's trenches. Some twenty others will at once respond to this example, then the whole company follows the movement. Once committed to the bayonet, there will be no giving way. But the moment must not be allowed to pass; and time must not be given to allow this enthusiasm to cool. This is the business of the officer; he must know that his personal example carries much more weight with the men than that of their comrades. For him, too, the first bullet and the first bayonet thrust, which is the reason why our losses in officers have been so great.

On the other hand, if it is a case of standing an assault, we employ, as the Japanese do, the following method. We fall back some dozen paces from the trench, in order to leave this obstacle between us and the enemy; the instant he crosses it, we attack him with the bayonet, taking advantage of the momentary disorder caused by the obstacle.

Nevertheless, it seems to me that trenches, with a slight profile, do not constitute an obstacle. Moreover, the enemy does not always come to the bayonet, even when he has approached very close to a position. Then one has to cross the trench oneself in order to rout him.

The general rule, when one delivers a counter-attack, is to fire a last volley at point blank, then . . . . to the bayonet!

Certain people maintain that, in order to repulse an assault, rifle fire is sufficient; it is urged in support of this that our assaults, and those of the Japanese, have been repulsed by rifle fire alone, with heavy losses for the assailant. Incontestably there have been examples of cases of this kind; but why pass over in silence the equally numerous cases where the fire has not succeeded in repelling the assault, and where the enemy has arrived, in spite of everything, up to the bayonet's point? What, in such circumstances, would troops do, who do not know how to fight with the bayonet, who have no confidence in the bayonet? Will they hold their ground before the enemy?

I permit myself another question: Have positions, above all, fortified positions, been carried by fire alone? Never, or if we have abandoned positions to the enemy, it has been by order, and in no way because compelled to do so by the enemy's fire.

At Liao-Yang the Japanese several times attacked our regiment, on the 30th and 31st of August. It is indisputable that, during their attacks, our fire inflicted on them enormous losses, notably when they advanced in column; their companies and battalions literally melted away, leaving piles of bodies. Repeatedly, before arriving within 300-400 paces, they have fallen back in complete disorder. But, on the other hand, they have several times come within bayonet reach, and there have been furious *mêlées*.

If our soldiers were not trained to look upon the bayonet as the final and inevitable act of each combat, it is probable that they would have abandoned positions and would not have driven the enemy back at the point of the bayonet.

At Liao-Yang the Japanese did not compel us to evacuate a single one of our positions by means of their fire. And this, although their fire was hellish. They silenced the fire of our artillery; consequently, the conditions were most favourable for them; they literally drenched us with their projectiles. Our regiment had 18 officers and 700 men put *hors de combat*, and yet, after two whole days of this malignant hail, the Japanese failed in dislodging us from a single trench. If, in the end, we evacuated Liao-Yang, it was not, once more, the Japanese fire which compelled us to do so.

In the battles of October, round Mukden, during three entire days, the Japanese and ourselves, lying down in our positions, mutually drenched each other with bullets and shrapnels, suffering considerable losses, and taking no repose, either by day or night; but neither the one nor the other of us gave back one step. In my opinion a similar situation could be prolonged for an indefinite time, with the character of a war of position, and degenerate into immobility, without producing any decisive result.

On the other hand, at the night attack on the Toumynling Pass, three successive lines of entrenchments were carried by the bayonet, and all the defenders who did not succeed in escaping were killed where they stood.

It is thus impossible to pass over in silence the value of the bayonet as a means of education for the soldier. The indispensable condition of its employment being the crossing of the bayonet body to body engenders the need to advance, of approaching the enemy, and inculcates in the soldier the idea that the fire combat is only the preparation for the bayonet charge. A soldier trained in this

school does not fear the assault of the enemy, and does not himself hesitate to march to the assault.

Much has been heard of the method of procedure, new to us, employed by the Japanese against bayonet assaults; of slipping off on the run, when we commenced to charge them, then making a volte-face and firing on us. This is what they did at Turentchen. There are some men who have been deceived by this. I can understand that in peace exercises, where there are no bullets, no shrapnels, this method of proceeding may appear interesting. But in battle, it seems to me risky. And what if the men continue to run, instead of turning to the right about? They could not, moreover, apply this system when it is an entrenched position that they defend. Because once trenches have been given up to the enemy, it is not the fire that one could pour upon him which would dislodge him from them.

Finally, this very cunning procedure of the Japanese permitted two of our regiments of sharpshooters, the 11th and 12th, already surrounded at Turentchen by superior forces, to escape instead of being destroyed to the last man, which would have happened if the Japanese had known how to work with the bayonet as we do. Another example: during the attack on the Putiloff Hill, when the 36th Regiment of Sharpshooters charged with the bayonet, the Japanese had not time or had forgotten to fix their bayonets, and they were run through.

For the rest one conclusive proof, it is that the Japanese very quickly gave up this sort of cunning. At Liao-Yang and round Mukden (October) they themselves charged with the bayonet and received our attacks by a counter-attack. This curious fact then happened: that the Japanese, after having tested for themselves the efficacy of the bayonet, modified their ideas on this subject, and that they learnt from us to use it, at the moment when people among ourselves have begun to dispute its value.

Not less convincing are the given statistics on the losses by the bayonet; they are much about equal to those by artillery fire, in spite of the development made by the last-named.

Such are the indisputable facts which result from the present war. This war has not been the grave of the bayonet: very far from it, it has shown once more with clearness all the power and all the moral effect of the *arme blanche*. It will be thus, as long as there are wars, to-day as formerly; it is the moral force which will give the victory.

(To be continued.)

NAVAL NOTES.

HOME :—The following are the principal appointments which have been made: Admiral—Sir A. D. Fanshawe, K.C.B., to be President of Royal Naval College, Greenwich. Rear-Admiral—J. E. C. Goodrich, M.V.O., to be Admiral Superintendent at Gibraltar. Captains—W. L. Grant to "Hawke"; C. J. Baker to "Ramillies"; L. E. Power to "Edgar"; C. H. Moore to "Trafalgar"; H. A. S. Fyler to "St. George"; J. F. Parry to "Merlin"; E. A. Simons to "Formidable"; H. J. Clarke to "Minerva"; C. E. Hunter to "Scylla." Commanders — E. G. Lowther-Crofton, D.S.O., to "Sirius"; M. H. Hodges to "Sappho"; J. C. Tancred to "Pelorus" G. E. Corbett to "Encounter"; H. Blackett to "Topaze."

Admiral Sir A. D. Fanshawe, K.C.B., who has been selected to relieve Admiral Sir R. Harris, K.C.B., K.C.M.G., as President of the Royal Naval College, Greenwich, will take up his appointment on 1st October.

Rear-Admiral G. Le Clere Egerton, C.B., hoisted his flag on the 25th ult., at Devonport, on board the "Victorious," as Second in Command of the Atlantic Fleet, in succession to Rear-Admiral Sir A. B. Milne, Bart., K.C.V.O. Rear-Admiral J. E. C. Goodrich, M.V.O., succeeds Rear-Admiral Sir E. Chichester, C.B., C.M.G., as Admiral Superintendent at Gibraltar.

The new first-class battle-ship "Dreadnought" was commissioned at Portsmouth on the 1st inst., by Captain R. Bacon, D.S.O., with a nucleus crew; she is to be in the Reserve and will be under the orders of the Admiral Superintendent, while carrying out her trials.

The third-class cruiser "Proserpine" on the East-Indian Station is to be recommissioned at Port Said for a further term of service; a new crew for her being embarked on board the second-class cruiser, "Gladiator" at Chatham on the 28th ult., which ship will bring her old crew home.

Launch.—The new first-class battle-ship "Agamemnon" was launched on the 23rd June from the yard of Messrs. Beardmore and Co., Glasgow; she is a sister-ship to the "Lord Nelson" building at the Palmer Works, Jarrow-on-Tyne, both vessels having been designed by Sir Philip Watts, the Director of Naval Construction.

The dimensions of both ships are as follows :—Length, 410 feet; beam, 79 feet 6 inches; displacement, 16,500 tons with a mean draught of 27 feet. Protection is afforded by a complete water-line belt of Krupp steel, 12 inches thick amidships, tapering to 6 inches forward and to 4 inches aft. Above this belt is a central citadel reaching to the upper deck, protected by 8-inch armour, with 8-inch athwartship bulkheads, at each end of which are the barbettes for the heavy guns, which are also, so it is said, to be protected by 12-inch armour, but on this and some other points no official details have been as yet allowed to transpire. The magazines for the 12-inch guns are placed forward, and here also the greater part of the ammunition for the 9·2-inch guns will be stored; but for quick service in action, shell and powder rooms are provided between the boiler and machinery spaces, provision being made not only for adequate ventilation, but also for cooling the chambers. The conning tower is also protected by 12-inch armour.

In many of their details, as well as in the broad principles of their design, these vessels embody many departures from previous practice. For one thing, all their guns will be above the upper deck, and will, therefore,

have higher platforms, being about 9 feet further from the water-line than many of the guns in earlier battle-ships. Moreover, the heavy guns will be more concentrated in the centre of the ship, while the smaller pieces are carried on a central platform deck extending for about one-third of the length of the vessel, and over 30 feet above the water-line. These latter will, therefore, have great command of the water round the ship on all sides, and so be better able to repel torpedo attacks. The heavy guns will be mounted in barbette towers with armoured hoods, and they will have a large arc of training.

In respect of gun power, the two vessels fill an intermediate place between the "King Edward VII." and "Dreadnought" classes. The "King Edward VII." has four 12-inch and four 9·2-inch guns on the upper deck, and ten 6-inch guns, mostly on the main deck; the "Agamemnon" will have four 12-inch and ten 9·2-inch guns, all on the upper deck; while the "Dreadnought" will have ten 12-inch guns. The "King Edward VII." fires 5,920lb. of shot from 18 guns, the "Agamemnon" will fire 7,200lb. from 14 guns, and the "Dreadnought" 8,500lb. from 10 guns; at a comparatively long range also the guns of the "Dreadnought" will be much more effective than those of the other vessels. In the "Agamemnon" the 12-inch guns are mounted in pairs in barbettes fore and aft, while eight of the 9·2-inch guns are in twin barbettes, placed two on each side of the vessel, and the remaining two 9·2-inch guns are in single barbettes, one on each side, in the centre of the battery. The broadside fire of the ship will thus consist of four 12-inch and five 9·2-inch guns, while ahead or astern there will be two 12-inch and four 9·2-inch guns. There will also be thirteen 12-pounder q.fs., twenty-two three-pounders, two Maxims, and five submerged tubes for firing torpedoes. The 12-inch will be 45-calibre guns and the 9·2-inch 50-calibre guns.

The keel of the "Agamemnon" was laid on May 15th, 1905, and she was therefore launched in fifteen months from the beginning of operations. At the time of launching she was in a fairly advanced stage, having a considerable part of her armour in place and the whole of the fifteen Yarrow water-tube boilers, which constitute her steam-generating plant, the launching weight of the ship being 7,000 tons. The ship will be propelled by twin-screws and the machinery is of the usual naval type. The engines are to develop 17,750 I.H.P., with 120 revolutions, and a piston speed of 960 feet per minute, giving a speed of 18 knots.

The following are the comparative dimensions of the "Agamemnon" and "Dreadnought":—

	"Dreadnought."	"Agamemnon."
Length	500 feet.	410 feet.
Beam	82 „	70 „ 6 inches.
Draught	26 „	27 „
Displacement	18,000 tons.	16,500 tons.
H.P....	23,000	16,750
Speed	21 knots.	18 knots.
Maximum Coal Capacity... ...	2,500 tons.	1,800 tons.
Heavy Armament	Ten 12-inch guns.	Four 12-inch and ten 9·2-inch guns.
Cost...	£1,797,497	£1,615,101.

Dockyard and Contract Built Ships.—The Admiralty state that the figures of comparative cost of hulls in the case of similar ships built in the Royal dockyards and private yards respectively, since the system of allowing contractors to complete vessels for service came into operation, are as follows:—

	Cost of Hull.	
	Contract built.	Dockyard built.
Battle-ships:—		
King Edward VII. Class.	£	£
Commonwealth	918,517	—
Dominion	884,435	—
Hindustan	899,607	—
King Edward VII.	—	905,741
New Zealand	—	872,560
Armoured Cruisers:—		
Monmouth Class.		
Berwick	400,354	—
Cumberland	410,105	—
Donegal	409,256	—
Lancaster	424,594	—
Kent	—	420,667
Suffolk	—	393,482
Essex	—	445,694
Cornwall	—	419,053
Devonshire Class.		
Devonshire	—	450,851
Antrim	501,506	—
Argyll	511,164	—
Carnarvon	492,292	—
Hampshire	490,472	—
Roxburgh	481,063	—

—*Times* and *Engineering.*

FRANCE.—The following are the principal promotions and appointments which have been made:—Capitaine de Vaisseau—J. P. Rochas to "Bruix." Capitaines de Frégate—A. M. d'Espinay Saint Luc, J. B. Cauvy, L. M. Viaud, M. J. Lacaze, H. P. Bushard to be Capitaines de Vaisseau; A. Frot to "Faucon."—*Journal Officiel de la République Française.*

The Conclusion of the Manœuvres.—Admiral Fournier struck his flag under the usual honours, on board the "Brennus" at Toulon, on the 4th ult., at the conclusion of the Grand Naval Manœuvres; as he has shortly to retire for age, the sea service of this distinguished officer, a worthy representative of all that is best in the French Navy, and one of the best tacticians that Navy has produced of recent years, is now practically brought to a close to the universal regret of the whole fleet.

Before leaving, Admiral Fournier addressed an Order of the Day, in which he complimented the Admirals, Officers and Men of the fleets which had been assembled under his command, on the high spirit, discipline and endurance displayed by all ranks during the Manœuvres. After drawing attention to the ease with which 24 armoured ships had been manœuvred, sometimes without signal, the Admiral points out:—"that the operation of the fleet before Algiers, Bizerta, Toulon, and Marseilles, shows that the arm *par excellence* for the defence of harbours is the torpedo in all its different forms, but above all in the employment of torpedo-boats

for night attacks and submarines by day. The following figures show the damage that the torpedo-boats and submarines could effect against a fleet attempting these operations.

"The fleet would have had placed *hors de combat* five ships before Bizerta; five before Toulon; sixteen before Marseilles on the morning of the 31st July; twenty-five before Marseilles during the day on the 2nd August, without counting those which would have been torpedoed before Algiers on the 6th July, had the submarines taken part in the operations.

"One cannot, then, too often point out, with a patriotic and legitimate satisfaction, to our country that the ægis of the sea-fronts of France in the future is a numerous flotilla of torpedo-boats and submarines covering the harbours and the points of the coast accessible to the enemy's attacks, in advance even of the action of the coast batteries.

"It is not the arm evidently for the conquest of the sea, which remains incontestably with the big ship, but it is the one which will most surely destroy every victorious fleet wishing to crown its success by finally attacking the enemy's port. From this point of view, the coast operations of our fleet have perfected to its profit the lessons of facts at the critical point, where the English fleet had left them at the conclusion of the brilliant manœuvres of mobilisation and operations on the high sea, carried out last month."

Admiral Fournier further issued a special Order of the Day, congratulating the submarines on the splendid work they performed:—"The Vice-Admiral Commanding-in-Chief the Manœuvre Fleet pays a special tribute to the high training and enthusiasm of the 1st Flotilla of Submarines of the Mediterranean Fleet, by attributing in an Order of the Day to the fleet and all the submarine flotillas, the extremely successful attacks directed against the fleet before Marseilles on the 31st July and 2nd August, sixteen of these attacks having been successful on the 31st July and twenty-five on the 2nd August. Thanks to the skilful and bold use of their periscopes, their degree of invisibility was such that they were able to approach with almost certainty to within launching distance of their torpedoes without being seen.

"This result reflects the greatest credit on Capitaine de Frégate Martel, who has been, with his dash and habitual spirit of initiative, the soul of the flotilla, and also to the Commanders of the following submarines, the "Grondin," "Bonite," "Anguille," "Thon," "Dorade," "Souffleur," "Gustave Zédé," and "Alose."

"Great credit is also due to the plucky crews of these small vessels, who, animated by the fascination of the difficulties and risks of their profession have stood with unfaltering good humour the fatigues of these operations and the necessary preparation for them."

The New Distribution of the Fleet.—The following alterations have been made in the distribution of the fleet before published:—The armoured cruisers of the First Squadron will be "Gambetta," "Jules Ferry," and "Victor Hugo," instead of "Gloire," "Condé," and "Amiral Aube," which will be attached to the Second Squadron. In consequence of this change, the three armoured cruisers of the Second Squadron, "Montcalm," "Guédon," and "Dupetit Thouars," will form the 1st Division of the Third Squadron, the 2nd Division of the 3rd Squadron being composed of the three armoured cruisers "Marseillaise," "Jeanne D'Arc," and "Dupuy de Lôme." The 3rd Squadron will thus be entirely composed of armoured cruisers, and

the battle-ships "Baudin," "Formidable," and "Dévastation" will be placed in reserve at Brest, and the "Henri IV.," "Tréhonart," and "Bouvines" in reserve at Cherbourg.

The first-class armoured cruiser "Kléber" has been withdrawn from the Mediterranean Fleet and sent to Toulon, where she is to be prepared to take the place of her sister-ship, the "Desaix" as flag-ship of the Atlantic division. Rear-Admiral Boué de Lapeyrère, who commands the Division, will thus have flown his flag in three of these ships in succession. Hoisting his flag originally in the "Dupleix," he had last year to return in her to Cherbourg, and owing to serious machinery defects, shift his flag to the "Desaix," which was withdrawn from the Mediterranean for the purpose; now the "Desaix" has returned, presumably also for machinery defects, and the "Kléber" has to take her place.

The divisions on distant stations have been reduced, with the exception of the Far East station. In the Atlantic Division the "Châteaurenault" is replaced by the "Jean Bart," and in the Indian Ocean the armoured cruiser "Kléber" is replaced by the protected cruiser "Friant."

Bizerta.—The following account of the present condition of the port and arsenal at Bizerta is abridged from the *Temps* :—

The canal is now widened along its whole length to a width at the bottom of 200 metres, instead of 80 metres as originally designed, making the navigation of it easier and safer. Still, however, large vessels, as in the case of the recent visit of the fleet on 17th July, only pass in and out one at a time, the second before entering waiting a signal from the first that she is clear. It would have been certainly possible for the battle-ships of the squadron to weigh together and pass through in single line, but caution is necessary on account of the rapid current, the hope that the widening of the canal would have diminished the rate of the current not having been fulfilled, at least not appreciably.

The transporter bridge was taken down two years ago, and two floating bridges worked on the chain principle have been substituted. Though a credit for removing the transporter and erecting it at Brest was inserted in the Estimates for 1902, it still remains at Bizerta.

The town has considerably extended, and the number of new white houses which meet the eye show that building was in active progress up to quite recently. The cathedral is completed, and several fine houses have been erected near the Place de l'Europe. On landing, however, the sensation experienced is that of entering an empty town. In 1902 great activity prevailed; numbers of people and workmen and carts were to be seen in the streets, as well as plenty of dust and mortar; to-day all this movement has ceased.

An inhabitant of Bizerta states: "We thought the arsenal would have had a numerous *personnel* and an important staff of officials, which would have stimulated trade and business of all kinds. Perhaps we were too sanguine, and our boom has now collapsed, as we have exceeded the immediate wants of the moment. When the late Rear-Admiral Merleaux-Ponty was in command there was great activity at the arsenal, giving great hopes of a prosperous future for all; the Minister of Marine also told us that the days of the 'lean kine' were over. We can only still hope that he may not have been mistaken."

The lake has now become the property of the Navy. By a convention recently signed by the new Bey of Tunis, Lidi Nacer, the powers and obligations of the fishing company have been acquired by the Ministry

of Marine, and in place of all rights and post dues which the company was empowered to levy by its concession it has received a sum of 825,500 francs (£33,020), and 1,032,000 francs (£41,280) for loss of fishing rights; also a further sum of 120,000 francs (£4,800) for the company's rights interfered with during the years 1903, 1904, and 1905. The convention is dated back to 1st January, 1906. The company could not do otherwise than accept these terms, as the constant passage of the ships through the lake to and from the arsenal interfered with the barrage of nets, and allowed the fish to escape out to sea.

The arsenal at Sidi Abdallah is now completed, and the different departments and workshops are ready for use. There is, however, no regular staff of workmen, and when a ship arrives with defects to be made good, she has to land her own men and artificers at the arsenal, where they make use of the machinery, etc. The arsenal can thus only complete small jobs, and the work is intermittent. Sidi Abdallah was intended to be a *point d'appui* for the fleet, but under present conditions it cannot fulfil its objects. It ought to be capable of repairing and provisioning a fleet, and should therefore have a permanent *personnel* sufficiently numerous for the purpose. It might then be arranged that some of the work now done at the arsenal of Toulon should be done at Bizerta.

The state of mind of the workmen at Toulon, who are at present in what may be called a condition of passive strike, for though they go to the arsenal they work as little as possible, makes it worthy of consideration whether in times of urgency Bizerta might not take the place of Toulon. The ill-will of the workmen at the latter arsenal should not be allowed to interfere with the plans of national defence, and possibly the closing of the great arsenal of Provence would be a good lesson to them.

The difficulty of obtaining a staff of workmen for Bizerta might be met by offering somewhat higher wages to good men from France, and by engaging and training natives of the place; advantage also might possibly be taken of the recruiting law, which fixes the term of service as two years in the Navy, and allowing a certain number of respectable young men to serve their two years at the arsenal at Bizerta.—*Le Yacht*, *Le Temps*, and *Le Moniteur de la Flotte*.

GERMANY.—*The Naval Estimates, 1906, continued.*—The increase of the *personnel* rendered necessary in consequence of changes in the Fleet Act, are as follows:—

a. In consequence of the increase of Foreign Service Ships.

126 Naval Officers; 40 Engineers; 16 Surgeons; 8 Paymasters and 5,643 Petty Officers and Men.

b. In consequence of the increase in the number of torpedo-boats and their greater readiness for War.

The number of torpedo-boats ready for service to be increased from 80 to 99 and full active crews are to be kept ready for them. The necessary increase in the *personnel* will be:—53 Naval Officers and 2218 Petty Officers and Men.

c. For the better employment of Ships' guns.

In order to increase the rate of firing, and accuracy of Ships' guns, the number of the Officers directing the fire and of the guns' crews must be increased. The number demanded is 90 Naval Officers and 1,907 Petty Officers and Men.

d. In consequence of the increase in size of ships and torpedo-boats.

Larger ships and torpedo-boats with heavier armaments and more powerful engines require larger crews. Increase demanded, 140 Naval Officers and 7,514 Petty Officers and Men.

e. In consequence of small alterations in the maintenance in Commission of Special Ships.

An increase in the number of Men is demanded for river gunboats, Foreign Service torpedo-boats, surveying ships, Fisheries Protection Ships and Crews for submarine boats. Increase demanded, 64 Naval Officers and 842 Petty Officers and Men.

f. In consequence of the need for more Officers for shore duties.

More Officers are required for service at the Admiralty, the Training Service, the Dockyard and Torpedo Divisions, the Seamen Artillery Division and the Mining Service. Increase demanded, 132 Officers.

Making a total increase by 1920, including all ranks of 36,250 :—

1. 545 Officers (under the Act of 1900), 605 Officers, enumerated above; in all, 1,150 Officers.
2. 16,976 Petty Officers and Men, Depot and Torpedo Divisions (under the Act of 1900); 18,124, enumerated above; in all, 35,100 Petty Officers, Seamen, etc.

Total Increase up to 1920 and Average Yearly Increase.

1. Non-Commissioned Officers, Seamen, etc. Dockyard and Torpedo Divisions :—

——	Warrant Officers.	C.P.O.'s.	P.O.'s.	Seamen.	Total.
By the Act of 1900	669	74	4,153	12,080	16,976
Increase agreed to in 1906	798	45	2,884	14,397	18,124
Total increase up to 1920 ...	1,467	119	7,037	26,477	35,100
Average Annual Increase ...	98	8	469	1,765	2,340

2. Naval Combatant Officers.

——	Admirals.	Vice-Admirals.	Rear-Admirals.	Captains.	Commanders.	Captain-Lieuts.	Senior Lieuts.	Lieutenants.	Total.
By the Act of 1900	...	3	6	28	60	118	170	160	545
Increase demanded, 1906	2	3	6	26	51	232	250	35	605
Total increase up to 1920 ...	2	6	12	54	111	350	420	195	1,150

3. Non-Combatant Officers: Engineers, Surgeons, and Paymasters.

——	Engineers.	Surgeons.	Paymasters.	Total.
By the Act of 1900	256	248	80	584
Increase demanded, 1906 ...	139	463	47	649
Total increase, 1920 ...	395	711	127	1,233

Table showing tabulated Increase of *Personnel* by 1920.

Naval Officers.[1]	Engineers.	Medical Department.	Accountant Department.	Warrant Officers.	C.P.O.'s.	P.O.'s.	Seamen.
2 Admirals. 6 Vice-Admirals 12 Rear-Admirals 54 Captains. 111 Commanders 350 Senior Lieuts. 420 Lieutenants. 195 Sub-Lieuts.	16 Chief and Senior Staff Engineers. 70 Staff Engineers. 101 Senior Engineers. 202 Engin'rs.	3 Staff Surgeon-Generals. 66 Senior Surgeon-Generals and Staff Surgeons 49 Staff Surgeons. 77 Assist-Surgeons. 516 Subaltern officials.	44 Staff Paymasters. 83 Paymasters. 192 Assistants and Writers.	1,467	119	7,037	26,477
1,150	389	711	319	1,467	119	7,037	26,477

Present total of all ranks in German Navy is 43,654 (including 180 Pay-Masters mentioned above). Increase by 1920, 37,675. Showing grand Total in 1920 of 81,399.—*Etat für die Verwaltung, der Kaiserlichen Marine auf das Rechnungsjahr, 1906.*

The Entry and Instruction of Engineer Officers.—The New Regulations relative to the entry and training of Engineer Officers have been definitively settled. Candidates must have worked for thirty months in one of the Imperial dockyards or one of the seventeen private yards selected by the Government. They will be nominated Engineer Pupils after examination. They will first undergo a three months' course of Military training, then a nine months' technical course in a commissioned Ship of War. After having undergone the examination for "*Applikanten*," they will be promoted Engineer-"*Applikanten*," and sent to do duty for two years on board ship, as Engineer-Quartermaster. A stay of a year at the Engineers' School allows them to reach the rank of Engineer-"*Aspirant*," if they pass the examinations successfully on leaving. They will remain four years in this grade and will go through another year's course at the Engineers' School, when they can be promoted to be Engineer Officers (with the rank of Sub-Lieutenant). Engineer Pupils, who are considered unfit to pursue their career after a year of service, will be considered as having completed their year of Voluntary Service, and will not be required to serve a second year. The Regulations relative to admission to the

[1] In order to cover the number of Officers required by 1920, it is deemed necessary to admit annually 175 Naval Cadets.

Engineers' School have been made more severe than formerly, as now the father or guardian has to bind himself to furnish during four years from 20 to 40 marks a month, whilst previously he had only to provide a sum of 40 marks per month for a year, starting from the day of admission. Moreover, the pupils have to engage themselves during their first year of study to serve in the Navy for a period equal to double the legal period. The whole time of training lasts nine years, of which three months are devoted to Military instruction, two years are spent at the Engineers' School, the remaining six years and nine months being devoted to practical service on board ship. A pupil admitted to the School at the age of 21 attains Officer's rank at the age of 30, and his education will have cost 6,000 marks (£300).

On the other hand his pay will be 4,542 marks (£227 2s.) whilst that of an officer of the combatant branch of corresponding rank is only 4,163 marks (£208 3s.). This difference is due to the fact that the Engineer Officer does not attain his rank until nine years after the Cadet.—*Revue Maritime.*

UNITED STATES.—*Needs of the Navy Personnel.*—In response to a request addressed by Chairman Foss, of the House Committee on Naval Affairs, to the Chief of the Bureau of Navigation, for a statement as to the number of officers and men that will be required to properly man the ships of the Navy, including those under construction, the Secretary of the Navy has submitted a memorandum containing tables which have been prepared on the basis of what might be called the "active" and "reserve" fleets. The Secretary states that as near as it is possible to predict, all ships now under construction and contracted for should be completed by 1st January, 1908. The battle-ships "South Carolina" and "Michigan" have not been contracted for, and their completion could not probably be expected before 1st January, 1910. The "active" fleet includes battle-ships, cruisers, scouts, and gun-boats built to withstand the recoil of the latest types of guns using smokeless powder, together with the gun-boats required in Chinese rivers and the Philippines, torpedo craft, despatch-boats, tugs, tenders, station-ships, supply vessels, training-ships, and other auxiliaries. The "first reserve fleet" is presumed to include vessels not originally designed for guns using smokeless powder, transports, hospital-ships, etc., such vessels to have one-third of their crews and only enough officers to care for ships, crews, and machinery. A "second reserve fleet" is presumed to include a certain number of coast-defence ships, such as old monitors, cruisers, gun-boats, and vessels which will be struck off the list by 1908 as obsolete. Under the above assumptions, including a smaller number of officers for shore duty than are now so engaged, the Secretary estimates the need of the Navy *personnel* as follows :—

	R.-Admirals.	Captains.	Comdrs.	Lt.-Comdrs.	Lieuts.	Lieuts. J.G.	Ensigns.	Mid'men.
A. Active Fleet	12	37	47	210	384	221	342	322
B. First Reserve	—	10	4	21	60	11	3	—
C. Shore Duty	12	50	65	87	77	11	15	—
Total.....	24	97	116	318	521	243	360	322

	R.-Admirals.	Captains.	Comdrs.	Lt.-Comdrs.	Lieuts.	Lieuts. J.G.	Ensigns.	Mid'men.
To put ships of first reserve in commission and man all colliers with naval crews add	4	—	17	55	98	74	132	72
To put ships of second reserve in commission add	—	—	9	16	27	21	15	10
Grand total	28	97	132	389	646	338	507	404
The Navy List of 1st January, 1908, and according to present law, should include	21	85	121	206	355	—	205	395
Shortage 1st January, 1908, if all ships were commissioned	7	12	11	183	291	338	302	9
For 2 battle-ships appropriated for, but not yet contracted for	—	2	—	8	16	8	16	20
	7	14	11	191	307	346	318	29
Difference between Navy List, 1st January, 1908, and 1st January, 1910	5	6	1	3	—	15	289	95
Estimated shortage, 1910 ...	2	20	12	188	307	331	30	00

Similarly the following enlisted men will be required:—

A. Active Fleet	37,283
B. First Reserve	3,309
C. Shore Stations	1,219
Total	41,811
To put ships of first reserve in commission and man all colliers with naval crews add	7,827
To put ships of second reserve in commission add...	1,986
Men in training, in transit, and in hospitals (sick)...	8,250
Grand total	59,874
Under present law the enlistment force allowed is ...	37,000
Shortage, 1st January, 1908	22,894
Add for battle-ships "South Carolina" and "Michigan," appropriated for, to be done about 1st January, 1910	1,600
Total shortage, 1910	24,474

"It will be seen," the Secretary adds, "that the shortage in the number of rear-admirals, captains, and commanders required is comparatively small. The officers of the captains' list are at present more actively employed at sea than any others of command grade, the number of large vessels in commission and the constant addition of new ones being the cause of this. Then, again, navy yards and stations at home and in our insular possessions absorb, together with the bureaus, offices and boards in Washington and elsewhere—a large number—furnishing very

active employment for all on the captains' list. The shortage in commanders can be met by ordering the requisite number from shore duty. The reason for the number now employed on shore duty at present is that most of our new ships are captains' commands, as pointed out above. The shortage in the grades of lieut.-commander, lieutenant, and lieutenant (junior grade) forms the most serious feature, as they are required for the performance of executive, watch, and gun division duties on board ship, and the lack of such officers directly affects the discipline and efficiency of the fleet."—*U.S. Army and Navy Journal.*

MILITARY NOTES.

HOME.—The following are the principal appointments which have been made:—

Major-General—The Hon. Sir T. W. Stopford, K.C.M.G., C.B., from Director of Military Training, to Command the London District.

Colonels—J. K. Trotter, C.B., C.M.G., is promoted to the rank of Major-General. R. Bannatine-Allason, C.B., from h.p., to be a Brigadier-General, to Command the Potchefstroom Sub-District. T. C. Porter, C.B., from a Staff Officer for Imperial Yeomanry, to be a Brigadier-General to Command the Harrismith Sub-District. E. Hegan, from h.p., to be a Staff Officer for Imperial Yeomanry, with the substantive rank of Colonel. C. A. Bray, C.M.G., Staff Paymaster, to be Chief Paymaster, with the substantive rank of Colonel. Sir G. V. Thomas, Bart., C.B., D.S.O., from h.p., to be a Staff Officer for Horse and Field Artillery, with the substantive rank of Colonel. H. A. Scott, from a Colonel on the Staff for Royal Artillery, to be a Brigadier-General to Command Coast Defences.

Heavy Trestle Railway Bridge.—As it had been decided that the Railway Companies of the Royal Monmouth Royal Engineers (M.) were to spend the last fortnight of their annual training at Whitehill, Hants, for work in the Woolmer Instruction Railway, under the direction of the officer commanding the Railway Companies, R.E., at Longmore, and as it was expected that they would be principally employed in platelaying while at Whitehill, the officers commanding the two Railway Companies (Nos. 3 and 5) of the R.M.R.E. (M.), in making out the annual programme of field works to be carried out by the Railway Company's R.M.R.E. (M.), decided to devote rather more time than usual, while at Monmouth, to the construction of heavy trestle bridging.

Accordingly, stock was taken of all the available timber and other materials at Pwlholm, and an officer from each Company was directed to take soundings of the River Monnow, at "Bridgehead," and to get out a section and send in a report as to the feasibility of constructing a heavy trestle bridge across the river at this spot.

They reported the distance from bank to bank to be 100 (one hundred) feet, the banks to be shelving steeply and muddy, showing a certain amount of probable sinkage, but that the main portion of the river bed was fairly level, and hard gravelly bottom, and the greatest depth of water to be 11 feet 4 inches (eleven feet four inches).

It was accordingly decided to construct a heavy trestle bridge of 10 (ten) bays of 10 (ten) feet each, with eleven trestles, including the

two shore transoms, for which 12-inch by 12-inch baulks were used. Detail drawings of the bridge and of each trestle were got out while the Railway Companies were at Ross for their annual musketry course, from the information furnished in the report called for.

The trestles next the shore on either side of the river were rested on footings of courses of sandbags, as it was found practicable to construct these footings, as the water was comparatively shallow at these points.

It was decided to rest the seven centre trestles, with their groundsills, on the river bottom, as, owing to the depth of water, it was not considered necessary and scarcely feasible to construct crib piers in these positions.

To enable these heavy trestles to be placed in position more easily, the locomotive tender (on charge as "Wood and water wagon one") was converted into a species of travelling crane, by having two 30 feet bull-headed rails fixed on either side of the tender, so as to project some distance in front of it, and duly stayed with wire, etc. The tank of the tender was then filled with about 5 tons of water, to keep it steady, and to prevent its kicking up behind, when the weight of the heavy trestle was taken on the projecting crane tackle.

The last heavy trestle was placed in position, and the superstructure of the bridge completed on 8th August, when the R.M.R.E. (M.) were inspected in the works by H.R.H. the Duke of Connaught.

It is scarcely necessary to add that in service the construction of a heavy trestle railway bridge would scarcely be attempted in such a depth of water; but rather a deviation of some considerable length of railway line would preferably be laid to some shallower portion of the river. It was constructed at this particular spot at Pwlholm, because it is only at this spot that any land is owned by the War Department on the other side of the river.

The height of water in the River Monnow varied from day to day during the construction of the bridge, as much as two feet variation being recorded, and this was mainly due to the intermittent working of the turbines of the Monmouth Corporation Electric Supply station, situate some half-mile below Pwlholm.

The tallest trestle was 16 feet in height; and 12 inch by 12 inch timber was used for the legs, topsills, and groundsills of all the trestles, 12 inch by 6 inch timber being used for the side stays. 12 inch by 3 inch timber was used for the back stays from trestle to trestle, and these were fixed with coachscrews to the inside of bottom of legs of each trestle, at the required angle, while the trestle was suspended from the crane, and before it was lowered into position on the river bottom, the top of the back stays being fixed to the previous trestles after lowering into position. It was originally intended to lay as road bearers, two baulks of 12 inches by 12 inches, one on the top of the other on each side of the bridge; but it was found that there was not sufficient timber available for this, and so one baulk only was used, this being found to be quite strong enough for the load the bridge would have to carry. The tops of the trestles were further stayed by 30 foot rails, laid flat and spiked down to the topsill of each trestle. Sleepers and rails were laid on the road bearers.

The gauge is the standard gauge, 4 feet 8½ inches. The locomotive weighs 14 tons, on a four foot six inch wheel base.

The tender weighs 7 tons, and when converted to crane, carried 5 tons water, and, say, 1 ton superstructure of crane, making 13 tons in all, on a seven foot six inch wheel base.

The locomotive, tender, rails, and sleepers originally formed part of the railway in use at Suakin, in 1885.

N.B.—A barrel pier raft, which had been constructed by the Bridging Companies R.M.R.E. (M.), was found in the river, and this was utilised to assist in placing the trestles in position.

Civil Employment of Ex-Soldiers and Sailors.—The report and recommendations of the committee ordered to inquire into the civil employment of ex-soldiers and sailors have been issued as a Blue Book. This report, with appendices and the index of the evidence given before the committee covers 187 pages. The committee, with Sir Edward Ward, K.C.B., Permanent Under-Secretary of State for War, as chairman, consisted of the following members:—Major-General Lord Cheylesmore, C.V.O., Colonel W. Elliot, Paymaster-in-Chief, C. E. Gifford, R.N., C.B. (representing the Admiralty), Sir Frederick Harrison, general manager, London and North-Western Railway, Sir George Livesey, chairman, South Metropolitan Gas Company, Major-General H. S. E. Miles, C.V.O., C.B., Director of Recruiting and Organisation, Colonel H. A. Walsh, C.B., Chief Recruiting Staff Officer, with Mr. A. C. Pedley, I.S.O., as secretary.

The terms of reference were—(*a*) To inquire into the position of the various organisations which at present assist pensioners and discharged soldiers and sailors to obtain civil employment; (*b*) to report whether by the co-ordination of existing agencies, or by other means, their work could not be extended; (*c*) to consider how the existing means of employing ex-sailors and soldiers may be improved and extended, and to report generally on the whole question of the civil employment of ex-sailors and ex-soldiers.

The following is a Summary of the recommendations proposed by the Committee:—

1. That an association, which should be financially assisted by, but not under the control of, the Admiralty and War Office, should be created for the provision of employment for ex-soldiers and sailors.

2. That this association, which should consist of a central office in London and affiliated branches in counties and towns, should undertake all the work of employment now carried out by the War Office and by existing agencies.

3. That it should be supervised by a council selected, in the first instance, from

(*a*) Members of the existing societies in London.

(*b*) Representatives of the corporations of the cities of London and Westminster, the London County Council, and the Metropolitan borough councils.

(*c*) Employers of labour, including representatives of the War Office and Admiralty.

(*d*) Ex-Soldiers and sailors who have achieved success in civil life after leaving the colours.

4. That the management of the county and town branches should, under the general supervision of the central office, be conducted by local committees.

5. That such local committees should be presided over, where possible, by the lord-lieutenant in the case of the county and by the mayor in that of the town.

6. That the members of the local committee should consist of—

(*a*) The officer commanding the grouped regimental district.

(*b*) The colonel of the territorial battalions or corps.

(*c*) The naval recruiting officer of the district.

(*d*) Representatives selected from influential people of the district, employers of labour, etc.; and

(*e*) Ex-soldiers and sailors in the district.

7. That the Government subscriptions to existing associations should cease, and an annual grant of £16,000 (£12,000 from Army and £4,000 from Navy funds) should be made to the Association.

8. That funds should also be obtained by voluntary subscriptions.

9. That the Government should direct the various public departments to fill vacancies in the appointments detailed in Appendices 2 to 5, and any others which may be suitable by ex-soldiers and sailors of good character, and that only in the event of such candidates not being forthcoming are the posts to be filled by civilians.

10. That all future vacancies for Customs preventive men should be set aside for ex-soldiers and sailors.

11. That at least half the vacancies for outdoor Customs officers should be set aside for ex-soldiers and sailors.

12. That the majority of the vacancies for assistant clerks should be similarly dealt with.

13. That all established messengerships should be so filled.

14. That service in the Army or Navy of a satisfactory character which has not earned a pension should reckon towards superannuation allowance in the case of men appointed to established positions in the Civil Service.

15. That in the case of ex-soldiers serving in Government departments a proportionate value should be assigned to service in the Army or Navy with a view to its being considered with the period of civil employment when discharge on reduction of establishment is determined by length of service.

16. That county and borough councils should be urged to reserve a number of appointments for ex-soldiers and sailors.

17. That the age limit in the case of ex-soldiers and sailors who are candidates for appointment to the police should be raised to thirty-two.

18. That, in view of the Imperial contribution made towards the cost of the police, an obligation should be placed upon the force to employ men of the two Services in preference to others, so long as suitable candidates are forthcoming, and that, as in the case of the Civil Servant, previous service in the Army or Navy should reckon towards police pension.

19. That every soldier should be required to learn some description of technical work during his military career.

20. That certificates should be granted for proficiency in the various subjects.

21. That classes for instruction in motor-driving, &c., should be started as far as possible, and that opportunities should be afforded to the ex-soldier of acquiring instruction in other subjects, such as shorthand and typewriting, correspondence, book-keeping, platelaying, trenching, saddlery, telegraphy, electric wiring, farm work and ploughing, the slaughtering of cattle, &c.

22. That arrangements be made with the technical institutes in the various cities and towns where soldiers are quartered for the tuition of the men in various trades and crafts.

23. That the endeavour should be made, by means of periodical lectures at each military centre, to bring clearly before the men the possibilities of their future civil career.

24. That arrangements should be made to give ex-soldiers facilities for emigration, and for obtaining, whilst serving, a short course of training in work which is likely to be of use to them as emigrants.

25. That an employment gazette should be published by the central office of the suggested association, giving particulars as to situations vacant, the method of obtaining them, the prospects offered by various classes of employments, etc., and that subscriptions to cover its cost, fees, and travelling expenses of the lecturers would form a suitable charge against the canteen funds of ships and units.

26. That the form of character given to the soldier on discharge or transfer should be improved, both in respect to its division between his military and civil conduct and in regard to its general assessment.

27. That, with the view to the encouragement of thrift, arrangements be made, on the lines suggested in paragraph 72, to increase the inducements of the soldier to save money whilst serving.

28. That the advantages of membership of friendly societies should be brought to his notice.

29. That payments of pensions and reserve pay should be made at more frequent intervals.

We submit the foregoing recommendations with the object of ensuring that every soldier and sailor on completing his service with at least a "good" character should have an opportunity offered him of obtaining some post in civil life.

FRANCE.—*Alpine Manœuvres.* — The general commanding the 30th Division issued the following orders with regard to the manœuvres of that division which were to take place in the Alps between the 26th July and the 1st August this year:—

In order to avoid too great fatigue and broken nights for the men, all movements of too great compass should be avoided, and manœuvres should be regarded as suspended between the hours of 10 p.m. of one day to 4 a.m. of the next. Advanced positions will be taken up at 7 p.m., but no action against those positions nor any night attack may take place without an order from the divisional general.

On both sides the troops should manœuvre with wise deliberation; the care of each non-commissioned officer should be to so husband the strength of his men that they may be able to furnish the effort necessary at a given moment. Each unit commander, whatever his rank, should, on his own initiative, halt his company, either on account of its fatigue or in consequence of supply difficulties. It must not be lost sight of that manœuvres are a school, and should not degenerate into a toil, which deprives them of all profit.

In consequence, the overstepping of the desired limit should be avoided at all hazards, viz., allowing oneself to be carried away by the desire to do better, and exposing one's men more than would be done in reality. In an engagement, therefore, no attempt should be made to give proof of a useless bravery, facilitated by the absence of bullets

in the rifles, but to manœuvre according to circumstances, and by wisely and judiciously making use of the means available for the object it is proposed to attain.

Rôle of Umpires.—To each side will be attached a number of umpires, sufficient for each column to be accompanied by at least one of them. In mountain manœuvres the *rôle* of umpire plays a most important part, because in these manœuvres there is a tendency to try and please everyone, and decide contrary to all probability. The *rôle* of director of manœuvres is a most difficult and sometimes an impossible one. The duty of the umpires is to assist him. They should make the decision they consider right when the opposing sides are in sight of one another, and it will devolve on the commanders of those troops to inform the commander of their side with regard to it, who will himself report it to the director of manœuvres. Umpires' decisions will always be made with the object of avoiding exposing the men to too great fatigue by making them carry out too long marches. The two factors, viz., "the effects of fire" and "the *moral* of the men," are neither of them represented. It is therefore very difficult to tell which attack would succeed and which one would fail. On the other hand, in mountainous country too great importance should not be attached to numbers. Consequently the decisions made by the umpires and by the director of manœuvres should not be considered as final judgments, but as merely hypotheses introduced into the manœuvres. Under such conditions the obligation imposed on a company to evacuate a position need not necessarily imply any idea of blame.

Each of the two manœuvre periods, consisting of three days, will be carried out in a restricted zone permitting of the careful carrying out of an operation of small compass in a manner profitable for instruction. Each commander of a side should, therefore, go through all the phases demanded by a judiciously carried out operation. This method of action is, moreover, rational and according to regulation, and allows for the avoidance of surprises which the commander of a side might experience, which are of two kinds: either he is surprised by the enemy because he is badly guarded and does not know how to retain possession of *points d'appui*, which would allow him to resist a serious attack and to reform, or he has not paid sufficient attention to his intelligence service, and from that alone comes to grief.

Consequently it is necessary, especially in a mountainous country where useless fatigue imposed on the men is most pernicious, to act with method, viz.:—

1. To judiciously secure the service of reconnaissance, according to the *terrain* and information about the enemy.
2. To secure the possession of *points d'appui* which would permit of manœuvring in view of the mission to be accomplished, or to break off the action in an orderly manner in case of ill-success.

These operations, if they are wisely carried out, will allow the tactical operations of the 30th Division to be carried out in the Alps with care, without fatigue, and in a manner profitable to instruction.

Recruiting in 1905.—The War Minister issued on the 15th June last the recruiting statistics for the preceding year. This document is of

special interest, as it covers the period of transition through which the French Army was passing owing to the new law on recruiting of the 21st March, 1905. (*See* JOURNAL for June, 1906, p. 827.)

321,929 young men participated in the drawing of lots; 11,334 failed to appear before the Council of Revision. The Council of Revision awarded 23,784 exemptions as being unfit for all service; 298,145 young men were definitely entered on the recruiting lists as under :—

	Men.
Passed fit for service	146,958
Reduced service (1-year men)	48,977
Enlisted for service in the Navy ...	31,749
Put back for constitutional weakness	56,635
Classed in the non-combatant branches	13,771
Not permitted to serve (criminals, etc.)	55
Total	298,145

In addition, 84,233 men, put back from the 1903 and 1902 classes, were examined for the second or third time; of these, 6,426 were exempted, 19,427 were classed in the non-combatant branches, and 28,908 of the 1903 class were put back once more. The departmental Councils of Revision allowed dispensations to supporters of families to the number of 15,836. Finally, the number of young soldiers called to the colours in October, 1905, was 223,254, or 7,951 less than in 1904. The distribution by branches of the Service was as follows :—

Colonial troops	2,150
Home infantry	158,557
Cavalry	19,424
Artillery	19,944
Engineers	5,975
Transport	2,299
Administration troops	4,205

As regards education, the 1904 class consisted of :—

Entirely illiterate	10,644
Able to read only	3,486
Able to read and write only	28,999

The average height was 5 feet 5¼ inches; 2,182 recruits whose height was less than 4 feet 11 inches, the old minimum, were declared fit for the combatant branches. The maladies or infirmities which caused most of the exemptions were the following: Weakness of constitution, 1,784; pulmonary phthisis, 1,555; rupture, 1,524; loss of an eye, 1,378; curvature of the spine, 1,067; cardiac affections, 1,011; organic lesions in respiration, 820; club foot, 801; mutilations, 690; short sight, 646; varicose veins, 563; maladies of the genital organs, 536; deafness, 514. Maladies of the nervous system entailed 2,637 exemptions, of which 602 were on account of epilepsy, and 1,331 for idiotcy.

Amongst the 13,771 young men of the 1904 class posted to the non-combatant branches were: 2,162 with varicose veins, 1,392 short-sighted, 1,222 ruptured, 903 mutilated, 536 deaf, 481 stammerers, and 251 goitrous.

The number of voluntary enlistments contracted in 1905 amounted to 34,539, of whom 4,215 were for the Navy, 1,397 for the Colonial troops, 24,375 for the Home Army, 4,552 for the foreign regiments, Algerian tirailleurs, and Spahis.

The total number of re-engagements on the part of under officers amounted to 7,787, of whom 5,171 were under the conditions of the law of the 21st March, 1905 (*see* JOURNAL for June last, p. 829). The re-engagements of corporals, lance-corporals, and privates were 982, of whom 626 were made under the new law. In addition, 1,094 under officers, corporals, lance-corporals, or privates were given their commissions.—*La France Militaire.*

New Armament Questions.—As is known, the French Army have been given a new bullet, the "D." It was laid down by a Ministerial order that each man of the Regular Army should only receive two packets (16 cartridges) of this new ammunition for musketry practice, in order that he might learn to know the new projectile. Probably the large surplus stores of the old ammunition had first to be used up; perhaps, too, sufficient progress had not been made in the manufacture of the new ammunition, and that the security of the requirements for war had first to be satisfied. On the other hand, it is understood that the difficulties of adapting the sighting, which is necessary for the "D" bullet to the old rifle, have not yet been completely overcome, and that there is, consequently, no hurry to produce at present the new ammunition in larger quantities for the experiments in peace.

At all events, however, the military authorities are preserving the strictest secrecy with regard to the model of the new bullet. The War Minister has issued a new order with special reference to the issue of the new cartridges to the troops, and in which he lays down that these cartridges must only be issued to the men when actually on the ranges. The empty cartridge cases of the "D" bullet must be invariably collected and counted after each practice, and the officers superintending the practices are responsible for the strict observance of this order, and must be particularly careful that no cartridges or cases are lost.

Rumours have, however, recently arisen that the French military authorities are contemplating the introduction of a new rifle. The *France Militaire* has certainly denied these rumours. This denial, however, cannot be supported against the fact that the French military authorities *have already decided upon a new rifle, viz., the Pralong rifle, or that of the Normal School at Chalons, of 7-mm. calibre.* The final issue of this weapon is of course not yet settled, as the Government dreads the enormous cost, and is of opinion that its issue can be delayed until other Armies undertake the re-armament of their infantry. It would therefore appear that another adaptation of the Lebel rifle[1] is in more immediate contemplation. According to the latest intelligence, the Ministry, at one of its last sittings, contemplated the substitution of the repeating magazine of the Lebel rifle by a magazine containing a cartridge frame or clip, which should be placed under the breech. The cost of this adaptation would be about 20 francs a rifle. The *France Militaire* observes, not without reason, that the Lebel rifle is too played out for this alteration, and that it would be better to spend the money it entails on a new rifle.

Another very important question of armament is at present much talked of in France, viz., the procuring of machine guns. The machine gun which the French have been experimenting with for five years, and

[1] At the first adaptation in 1903 it was a question of making the breech reliably airtight.

which was issued to the 5th and 15th Chasseur Battalions as a tentative measure, is a Hotchkiss, and gave such satisfaction in its trials that an order for 200 of these guns has been placed with the Saint Denis manufactory. The gradual armament of all the Chasseur battalions on the western frontier with this weapon may be expected. The cavalry, too, had the Hotchkiss machine gun given them for experimental purposes, but up to the present no decision could be arrived at with regard to its means of transport (2 or 4-wheeled carts). On the other hand, quite recently the 30th Dragoons at Saint Etienne carried out experiments with regard to the durability of this weapon and its ammunition boxes on badly laid roads and across country, and were so satisfied with it that it is universally believed in France that all cavalry divisions will very shortly be armed with this weapon.

The reports in circulation that the present one is a newly discovered machine gun have perhaps arisen from the circumstance that for the first time a few details with regard to the construction of the weapon have been circulated by the French Press.

The following is a general description of the Hotchkiss automatic machine gun (rifle calibre), Model 1901, kindly supplied by the Hotchkiss Ordnance Company :—

The gun consists of a single barrel, screwed into the front of the receiver, which contains the operating mechanism; below and parallel to it is secured a hollow cylinder, which is in communication with the bore through a port drilled in the barrel. Contained in this cylinder is a piston on which are formed suitable cams for operating the breech-block, the firing, and the feed-mechanism. On discharge, as soon as the bullet has passed the port connecting the bore and cylinder the powder gas enters a chamber in the front end of the cylinder and throws the piston to the rear, where it is held by a sear. On releasing the sear, by pressing the trigger, the piston is thrown forward to its initial position by the main spring. It is obvious that if the sear is held out of engagement by pressing the trigger and the supply of cartridges be kept up, the piston will have a constant reciprocating motion.

The piston engages with the breech-block, and by its motion opens the breech, pushes the cartridge into the chamber, closes the breech, and fires. On opening the breech it extracts the fired cartridge case and brings a fresh cartridge to the loading position, performing, in other words, the functions of a soldier's hand when operating a straight-pull rifle.

The cartridges are carried in flat brass feed-strips, having a length of about 38 centimetres, and each containing thirty rounds. Each feed-strip is packed in an ordinary pasteboard box; from it is fed directly through the gun.

The feed-mechanism comprises a feed-wheel, which engages in cams cut in the piston, and registers with openings formed in the feed-strip; each backward and forward motion of the piston brings a fresh cartridge in line with the chamber, ready to be pushed home by the breech block and fired.

The gun is fitted with a shoulder piece and with a pistol-grip and trigger for controlling the fire. Aiming and firing are, therefore, carried out, as in all Hotchkiss guns, with the same facility as when firing a rifle from a rest.

Two men are required to work the gun, one to load and the other to fire, but a single man can work it in case of necessity.

No details with regard to the mounting of the gun can be obtained, as these are kept secret by the French Government.

SWEDEN.—*Changes of Uniform.*—In 1899, at the time of the introduction of the scheme (voted two years later) for the reorganisation of the Swedish Army, the necessity was recognised, before deciding on the constitution of supply as regards the new effectives, of adopting more practical models of kit than those in use hitherto, and of a shade that would lessen the degree of visibility of troops in the field. The colour of the uniforms was, and still is, *dark blue* for infantry, artillery, hussars, and transport, and *light blue* for dragoons and engineers.

As a result of experiments carried out that same year, 1899, in the infantry and artillery, etc., the various shades of blue, the preference was given to *light blue*.

Three years later, in 1902, new experiments were undertaken; infantry and artillery practice was carried out under very varying conditions of ground and light against targets of the following shades: very light blue, grey-blue, grey-blue on blue, grey-blue on khaki-grey, grey-brown, and earth-grey, with a view to discovering which of these shades were the least visible, and would consequently render the man less vulnerable. These experiments did not discover any appreciable differences as regards visibility. As a colour had to be selected, grey-brown was adopted, but it was decided provisionally that that shade should only be used for the cloak. In 1904 a cloak, in the form of a watch-cloak of a grey-brown colour, was therefore issued to all units of the Army.

At the same time other comparative experiments for the rest of the clothing were ordered to take place between three different shades: the *grey-brown* of the Swedish, the *grey-blue* of the German, and the *grey-blue* of the Austrian field-jaeger cloaks. As regards wear, the German *grey-blue* was found to be the best; it was, however, admittedly easier dirtied and of a higher price than the *grey-brown*. The same considerations applied, too, to the Austrian *grey-blue*. The War Minister, therefore, proposed in 1905 to adopt the *grey-brown* shade for all articles of uniform. This proposal was approved by the Chambers on the 7th March, 1906.

The new dress will consist, in addition to the watch-cloak of 1904, of a jumper, trousers, and head-dress; it will be the same for the entire Army, with simply distinctive badges for branches of the Service and regiments: officers will be dressed like the men, and there will be no parade dress. The form of the head-dress has not yet been decided upon. It is probable that a white fur cap will be adopted for winter and a cap or kepi for summer wear.

The various portions of the equipment will remain of drab leather. The complete change of uniform should be carried out in the course of 5 years; the annual expenditure is estimated at 1,305,600 crowns (about £65,280), or a total expenditure of 6,528,000 crowns (about £326,400).

As a result of the experiments of 1899 it was also decided to paint the artillery carriages and ammunition wagons *grey-blue*, to make them less visible.—*Revue du Service de l'Intendance Militaire.*

NAVAL AND MILITARY CALENDAR.

AUGUST, 1906.

1st	(W.)	H.M.S. "Cadmus" recommissioned at Hong Kong.
„	„	H.M.S. "Clio" recommissioned at Hong Kong.
3rd	(F.)	The Secretary of State for War issued a Memorandum on Army policy.
7th	(T.)	Japanese battle-ship "Mikasa" successfully refloated at Sasebo.
9th	(Th.)	Report of the Royal Commission on War Stores in South Africa was issued.
11th	(Sat.)	H.M. the King of Spain inspected the 16th Lancers at Bulford Camp.
22nd	(W.)	Reported that a Cossack Regiment mutinied at Samarkand and imprisoned its officers.
27th	(M.)	General von Liarliarski, temporary Military Governor-General of Warsaw, was shot dead whilst driving.
31st	(F.)	The King's prize for heavy artillery in the Artillery Volunteer National Competition was won by No. 1 Battery 1st Essex R.G.A (Vols).
„	„	1st Bn. Border Regiment left England for Gibraltar in the "Soudan."

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SWITZERLAND.—*Revue Militaire Suisse.* Lausanne: August, 1906.—"The New Geneva Convention." "The Preliminaries of the Austerlitz Campaign." "Portable Tools."

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Garrison got even." "In the Riding School." "Our Uniform Abroad." "On the Way to China in 1900." "The Regular in San Francisco." "The Militia Forces." "The Correspondence of Major-General Jackson."

NOTICES OF BOOKS.

The Military Life of H.R.H. George, Duke of Cambridge. By Colonel Willoughby Verner, late Rifle Brigade. London: John Murray, 1905.

It is indeed only the truth, as stated in the preface of this book, that "the military career of the Duke of Cambridge is really the history of the British Army during the latter half of the nineteenth century." The Duke became General Commanding-in-Chief in 1856, at the age of thirty-seven, and he held that somewhat thankless office for nearly forty years. During the lifetime of the Duke of Cambridge it was the fashion in some quarters to represent him as one who held steadfastly to the old order of things—as a man who was strenuously opposed to all change. There never surely was a greater mistake. When, as still a young man, he became the Head of the Army, he was indeed looked upon by the men of the old school as almost revolutionary in his ideas, and throughout the long and anxious years that he gave to his profession, it may be seen from the mass of material which Colonel Willoughby Verner has brought together that while for mere change *as such* he had the utmost repugnance, no one was more progressive than he when satisfied that change was necessary. As a matter of fact, it is not too much to say that in many matters the Duke was far ahead of his time, as may be seen from his memoranda on military education, on the establishment of the Staff College, on the formation of an adequate Reserve, or even on such latter-day matters as the Defence Committee or Battalion Mounted Infantry. His command of the Army and the disposal of the large amount of patronage attached to his high position were always marked by fairness and tact and loyalty towards his subordinates, by a total absence of anything like friction with any single one of the nineteen different Secretaries of State for War with whom he worked, and by the watchful care with which he ever guarded the interests of the Monarchy.

While a strong advocate of the due claims of seniority, he was always keenly sensible of the importance of securing the appointment of first-rate men. He was, moreover, ever anxious that every man should, as far as possible, have his chance; that he should not be set aside without trial in favour of the more fortunate. In regard to the suggested acceleration of promotion in the case of one officer he wrote:—"Colonel —— is a very good officer, I know; but there are many officers equally good if the chance be only given them, and they are in many cases greatly senior to Colonel ——. The Army as a whole is *not* benefited by causing heartburnings and dissatisfaction among these officers, and I certainly *strongly object* to be made a party to such an arrangement." There is frequent expression in this book of the Duke's good opinion of the officers, and especially of the regimental officers, of the Army, as witness his rebuke to a distinguished commander who had declared "that the ordinary run of officers were unfit to hold any position of responsibility." It is small wonder, then, that the Duke of Cambridge earned not merely high popularity, but the real affection of all ranks of the Army which he

so long commanded. Outside this circle it is possible that the story of his life may not especially appeal, for the Duke had seen but little active service; he had held no exceptional command in the field; about his military life there was possibly an absence of what men and women call "romance."

Colonel Willoughby Verner has well performed his difficult task—one laid upon him by the Duke himself. The mass of material at command must have been enormous, the labour of sifting it very heavy; and while some may object that the difficulty of selection has perhaps not been absolutely overcome, still, even for the general reader there is much of interest in these pages, while for soldiers this account of the military life of "The Duke" will awaken many memories of one who was ever a loyal, chivalrous, and appreciative Chief.

PRINCIPAL ADDITIONS TO LIBRARY, AUGUST, 1906.

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Cram Book for Lower and Higher Standard in Urdu. By Lieutenant P. G. B. COOKE. 8vo. (Presented.) (A. J. Combridge & Co.) Bombay, N.A.

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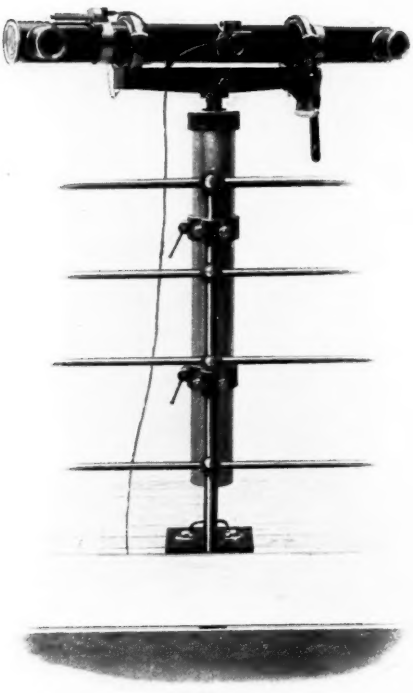

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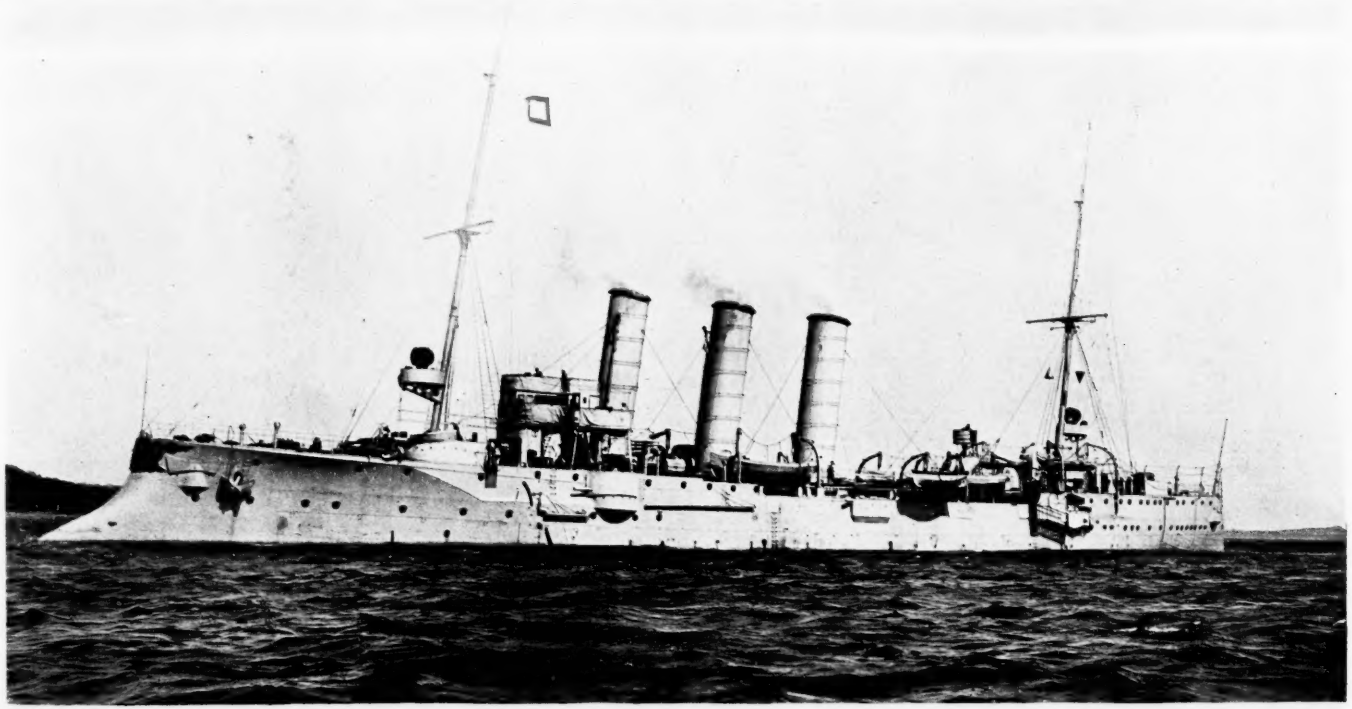

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